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Oki Data CONFIDENTIAL

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C5300/C5100

Color LED Page Printer

Maintenance Manual

for the General Public

[Rev. 4]

3

Related drawings

2

Drawing No.	Name
42805301TL	C5300/C5100 Disassembly for Maintenance for the General Public
42805301TR	C5300/C5100 RSPL for the General Public

1

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PREFACE

This manual describes the procedures of the maintenance of the C5300/C5100 printers.

The document is produced for maintenance personnel use. For details on the procedures for handling the C5300/C5100 of printers, see its user documentation.

- Note!**
- The descriptions in this manual are subject to change without prior notice.
 - In preparing the document, efforts have been made to ensure that the information in it is accurate. However, errors may be crept into the document. Oki Data assumes no responsibility for any damage resulting from, or claimed to be the results of, those repairs, adjustments or modifications to the printers which are made by users using the manual.
 - The parts used for the printers are sensitive and, if handled improperly, may be damaged. It is strongly recommended that the products are maintained by maintenance men registered with Oki Data.

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1. SPECIFICATIONS

1.1 System Configuration

C5300

Figure 1-1-1 shows the system configuration of C5300.

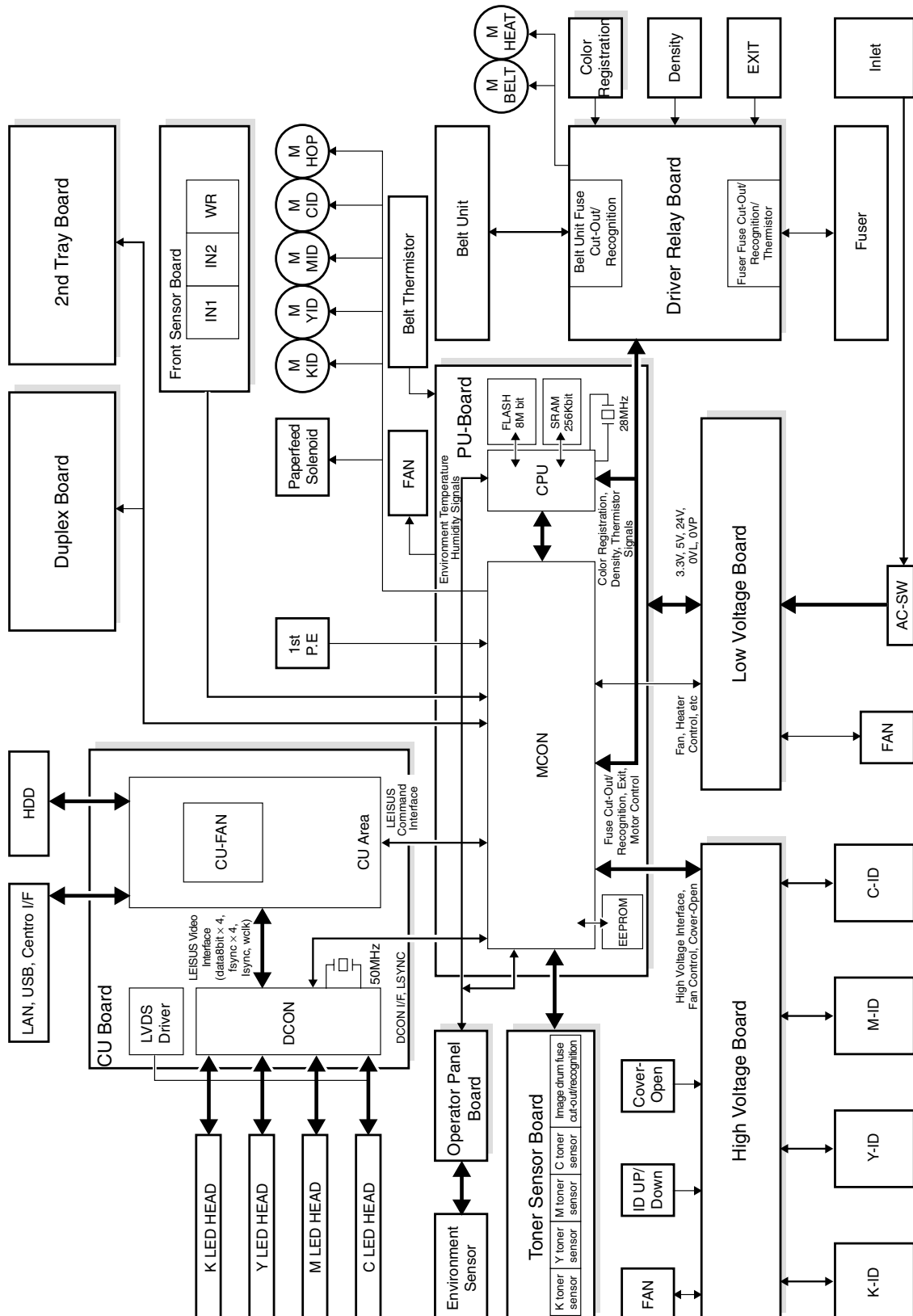


Figure 1-1-1

C5100

Figure 1-1-2 shows the system configuration of C5100.

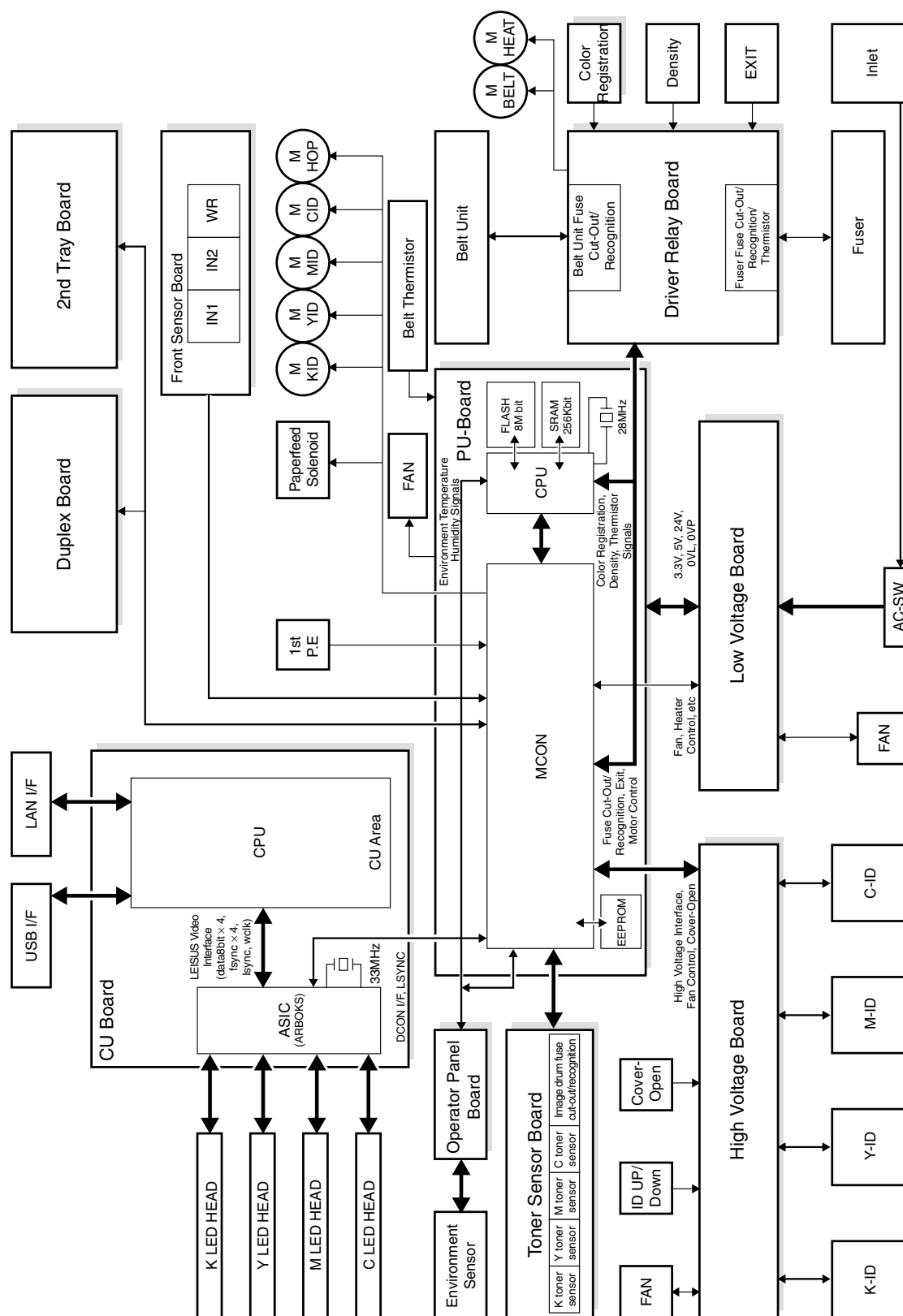


Figure 1-1-2

1.2 Printer Configuration

The inside of C5300 printers is composed of the following:

- Electrophotographic Processor
- Paper Paths
- Controller Block (CU and PU)
- Operator Panel
- Power Units (High Voltage Unit and Low Voltage Unit)

Figure 1-2-1 shows the configuration of each printer.

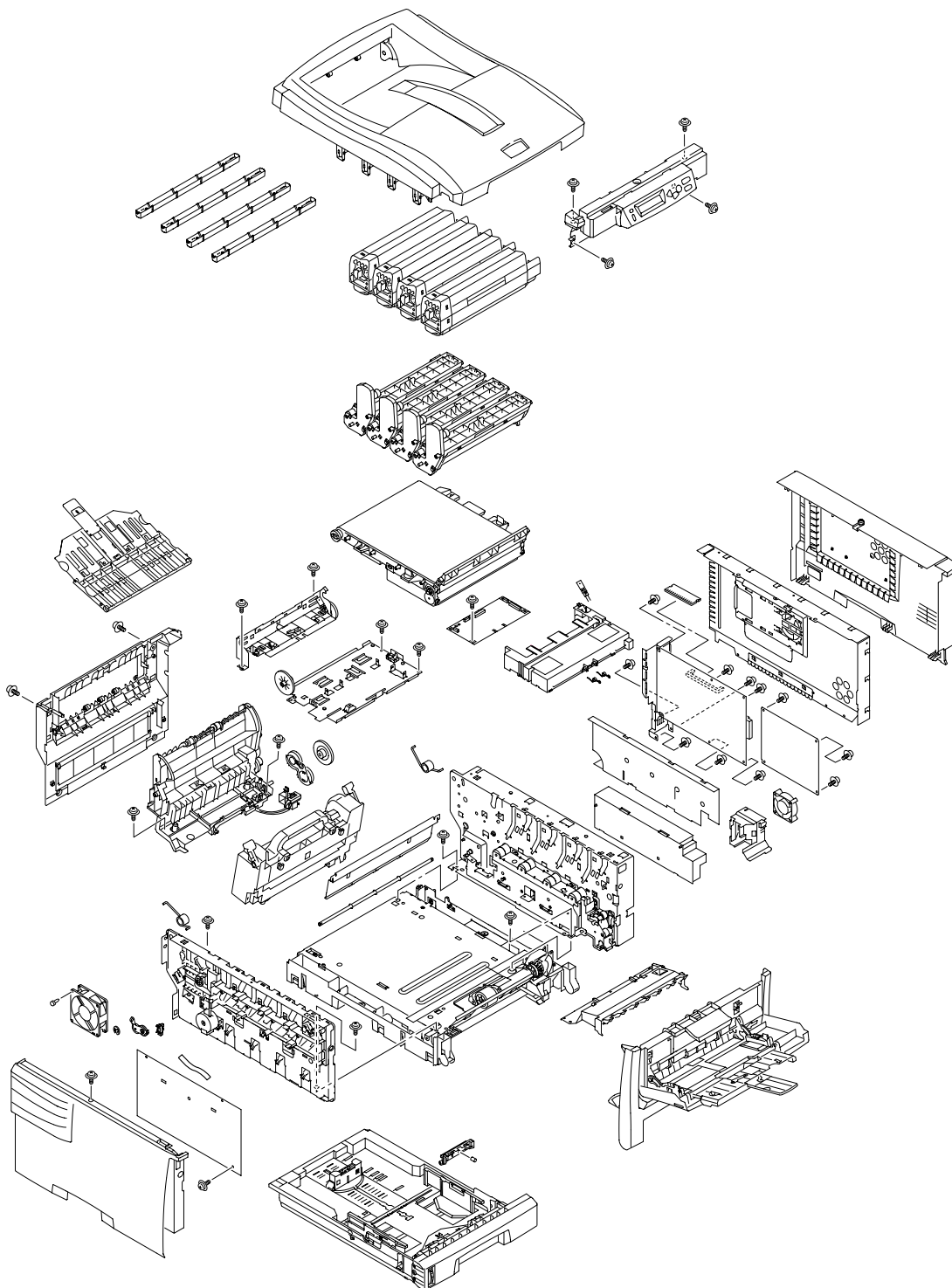


Figure 1-2-1

The inside of C5100 printers is composed of the following:

- Electrophotographic Processor
- Paper Paths
- Controller Block (CU and PU)
- Operator Panel
- Power Units (High Voltage Unit and Low Voltage Unit)

Figure 1-2-2 shows the configuration of each printer.

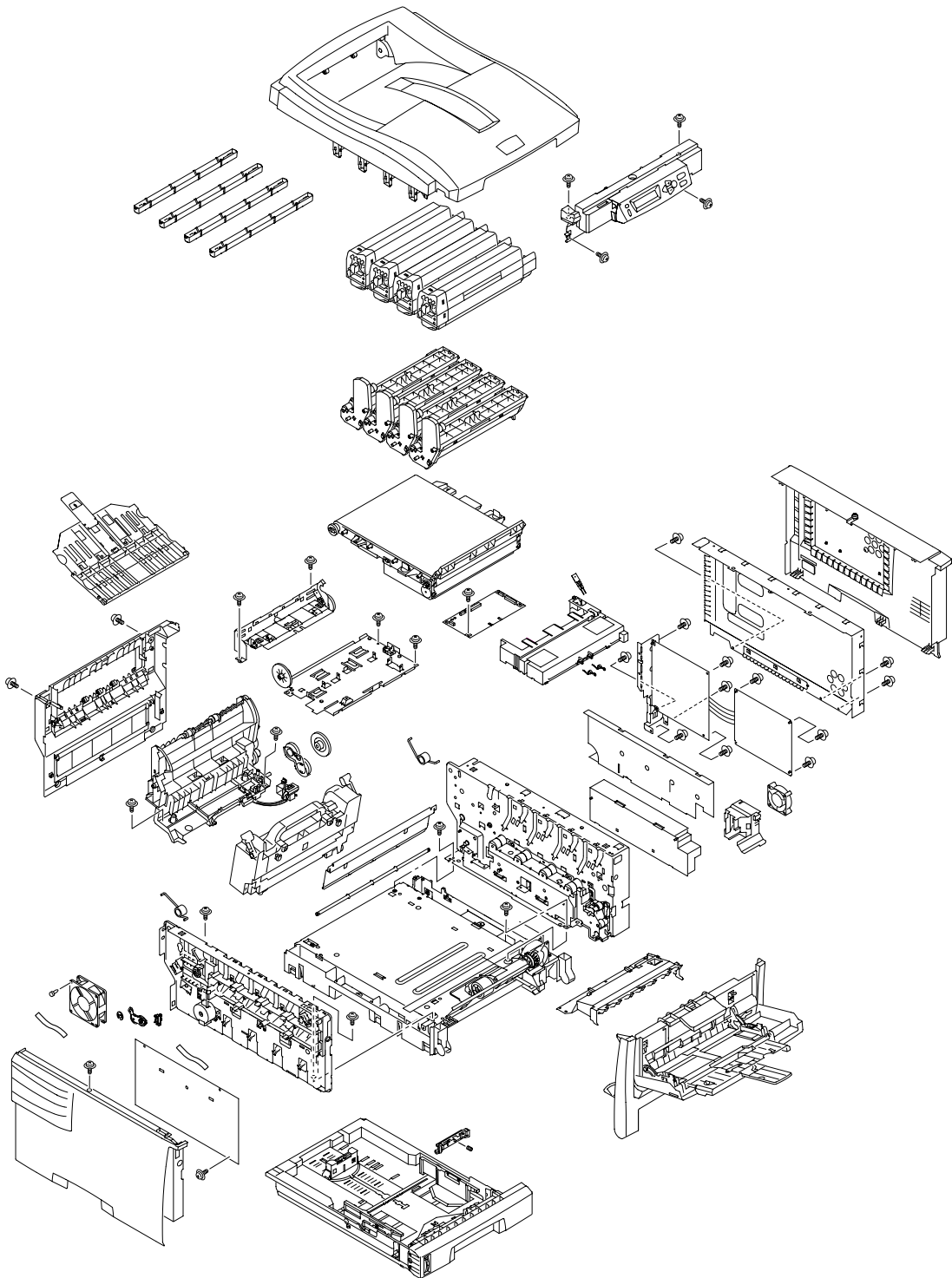
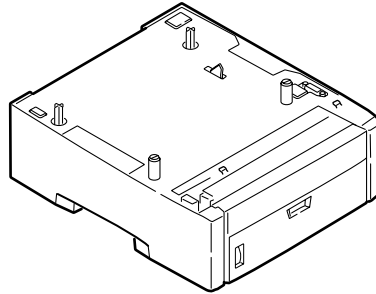


Figure 1-2-2

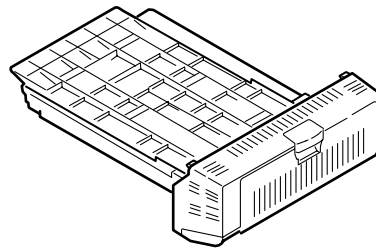
1.3 Option Configuration

The following options are available for C5300/C5100.

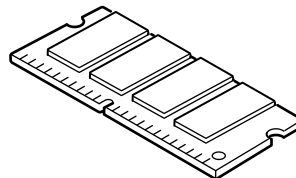
(1) 2nd Tray



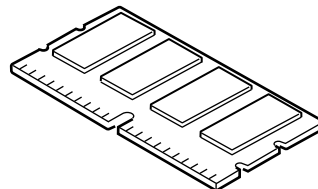
(2) Duplex Unit



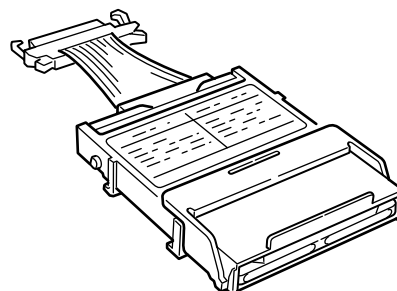
(3) Expansion Memory (C5300) 64 MB



(4) Expansion Memory (C5100) 64/256 MB



(5) Hard Disk (C5300)



1.4 Specifications

- (1) External Dimensions
Height: 345 mm. Width: 422 mm. Length: 561 mm.
- (2) Weight
Approx. 20 kg (except consumables)
- (3) Paper
Type: Plain paper, Transparencies (Recommended: MLOHP01)
Size: Postal card, Legal 13" or 14", Executive, A4, A5, B5, A6 (A6 held in and fed from only 1st tray and front feeder)
Weight: 1st tray 55 kg to 103 kg (64 to 120 g/m²)
Front feeder 55 kg to 172 kg (64 to 203 g/ m²)
- (4) Print Speed
Color: 12 pages per minute (Transparencies: 6 pages per minute)
Monochrome: 20 pages per minute (Transparencies: 12 pages per minute)
Postal Cards, Labels, Thick Paper: 8 pages per minute
- (5) Resolution
600 × 1200 dots per inch
- (6) Power Input
100 VAC ±10%
- (7) Power Consumption
Peak: 850W
Normal Operating: 400W (5% duty)
Idle: 80W
Power Save Mode: 18W or less
- (8) Frequency
50Hz or 60Hz ± 2 Hz
- (9) Noise
Operating: 54 dB (Without duplex unit and 2nd tray)
Standby: 40 dB
Power Saving: Background noise
- (10) Consumable Life
Toner Cartridges: 5,000 pages (images) (5% duty, Each of Y, M, C and K)
Image Drums: 22,000 pages (images) (5% duty, Continuous printing, Each of Y, M, C and K)
- (11) Parts Replaced Periodically
Fuser Unit: Every 45,000 pages (prints)
Belt Unit: Equivalent of 50,000 pages (images) (3 pages/job)

(12) Temperature and Relative Humidity

Temperatures

Temperature condition

	Celsius	Remarks
Operating	10 to 32	17 to 27 Celsius (Temperatures to assure full color print quality)
Non-Operating	0 to 43	Power off
Storage (Max. One Year)	-10 to 43	With drum and toner
Delivery (Max. One Month)	-29 to 50	With drum and without toner
Delivery (Max. One Month)	-29 to 50	With drum and toner

Humidities

Humidity condition

	Relative Humidity (%)	Max. Wet-Bulb Temperature (Celsius)	Remarks
Operating	20 to 80	25	50 to 70% (for assurance of full color print quality)
Non-Operating	10 to 90	26.8	Power off
Storage	10 to 90	35	
Delivery	10 to 90	40	

(13) Printer Life

420,000 pages (on a A4-size basis) or five years

2. PARTS REPLACEMENT



This section describes the procedure for replacing the parts, assemblies and units in the field. The replacing procedure is given for detachment. To attach, use the reverse procedure.

2.1 Precautions in Replacing Parts

- (1) Before replacing the parts, be sure to remove the AC cable and the interface cable.

- (a) To remove the AC cable, always use the following procedure.

- i) Flip the power switch of the printer off (to "O").
- ii) Pull the AC inlet plug of the AC cable out of the AC receptacle.
- iii) Remove the AC cable and the interface cable from the printer.

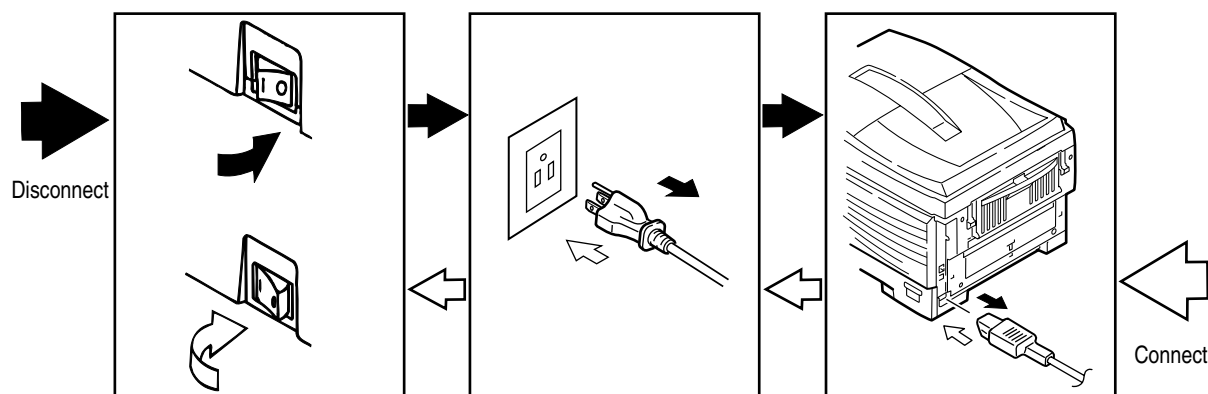
 Warning	Risk of Electric Shock	
--	------------------------	---

There is a risk of electric shock during replacement of the low voltage power supply. Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cable is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

- (b) To connect the printer again, always use the following procedure.

- i) Connect the AC cable and the interface cable to the printer.
- ii) Insert the AC inlet plug into the AC receptacle.
- iii) Flip the power switch of the printer on (to "I").

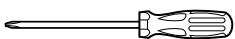
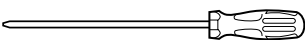

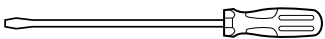
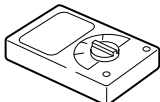
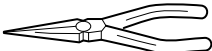




- (2) Do not disassemble the printer so long as it operates properly.
- (3) Minimize the disassembly. Do not detach parts other than those shown in the replacing procedure.
- (4) For maintenance, use designated tools.
- (5) Follow the order instructed to disassemble the printer. Incorrect order may damage the parts.
- (6) Small parts such as screws and collars tend to get lost, so temporarily place and fix them in their original positions.
- (7) When handling ICs and circuit boards such as microprocessors, ROMs and RAMs, do not use gloves that likely to have static.
- (8) Do not place the printed circuit boards directly on the printer or the floor.

[Maintenance Tools]

Table 2-1 lists tools necessary to replace the printed circuit boards and the units.

Table 2-1 Maintenance Tools

No.	Service Tools		Q' ty	Place of use	Remarks
1		No. 1-100 Philips screwdriver	1	2~2.5 mm screws	
2		No. 2-200 Philips screwdriver, Magnetized	1	3~5 mm screws	
3		No. 3-100 screwdriver	1		
4		No. 5-200 screwdriver	1		
5		Digital multimeter	1		
6		Pliers	1		
7		Handy cleaner	1		Refer to the following note.
8		LED Head cleaner P/N 4PB4083-2248P001	1	Cleans LED head	

Note! Use a vacuum cleaner dealing with toner. Using a common vacuum cleaner may cause fire.

2.2 Part Replacement Procedures

This section describes the procedures for replacing the parts and assemblies shown in the following disassembly chart:

2.2.1 Top Cover

- (1) Open the top cover assy.
- (2) Remove the ten screws (black) ① to detach the cable cover ② and the top cover ③.

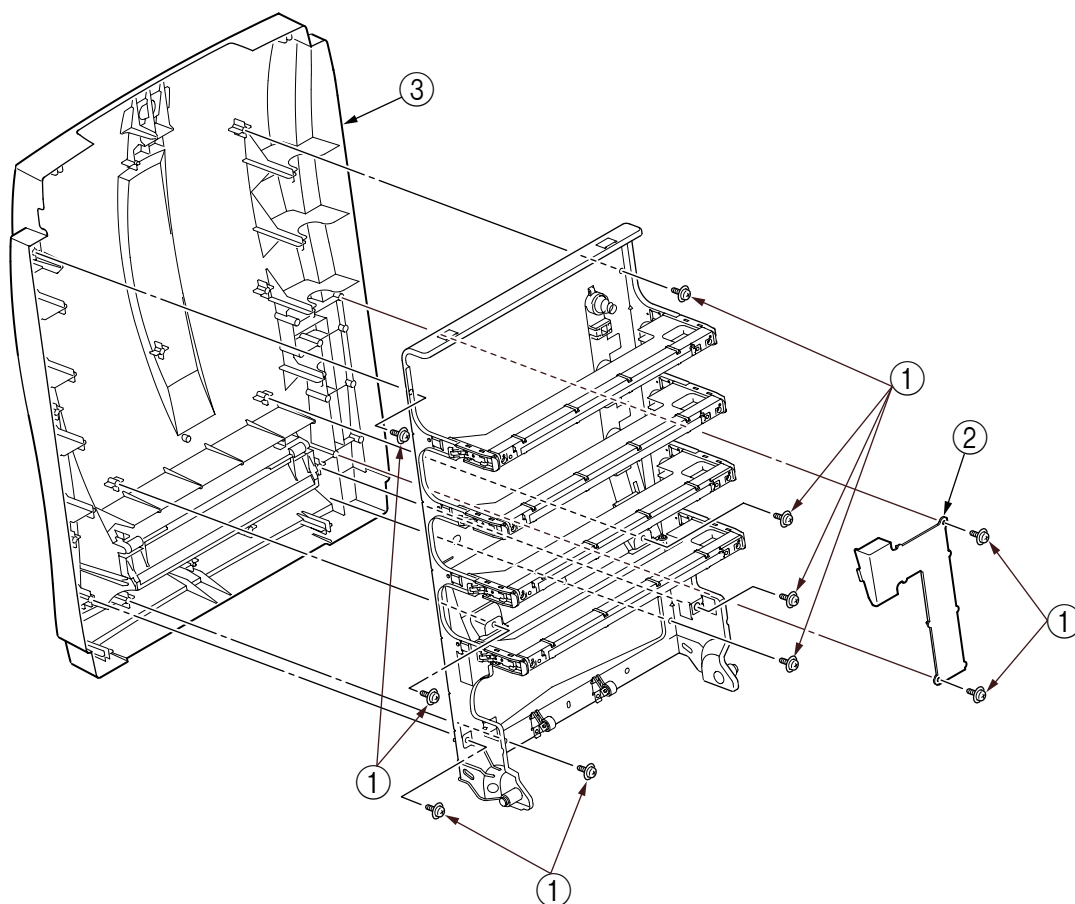


Figure 2-2-1 Top Cover

2.2.2 Left Side Cover

- (1) Open the top cover ①.
- (2) Open the feeder unit ②.
- (3) Remove the screw (gold) ③ to detach the left side cover ④.

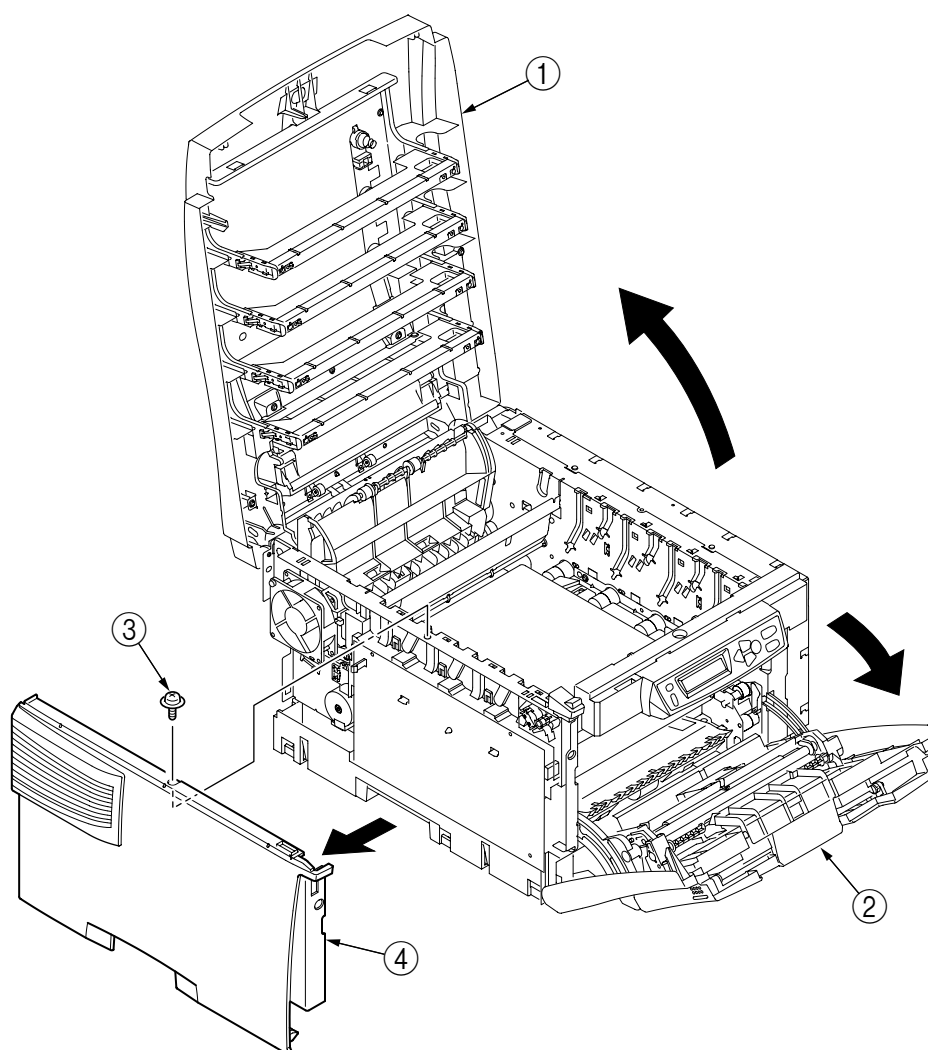


Figure 2-2-2 Left Side Cover

2.2.3 Right Side Cover

- (1) Open the top cover ①.
- (2) Open the feeder unit ②.
- (3) Loosen the screw ③ to detach the right side cover ④.

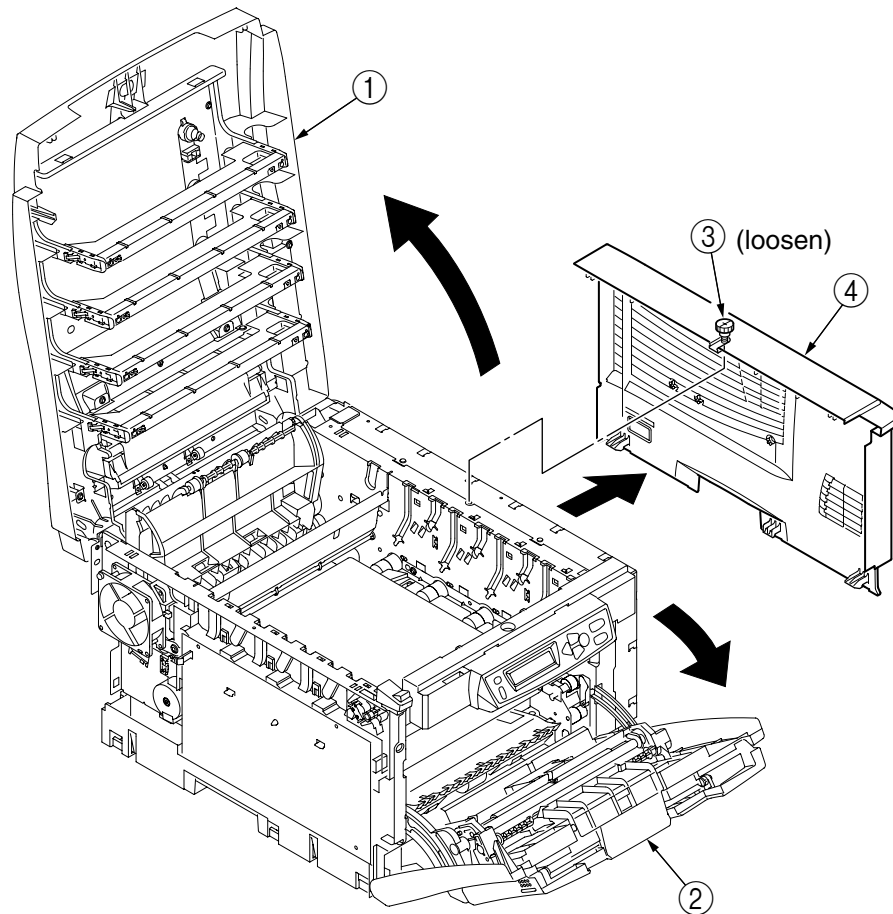


Figure 2-2-3 Right Side Cover

2.2.4 Face-Up Tray

- (1) Open the face-up tray ① in the direction of the arrow, and disengage it at its two places to detach it.

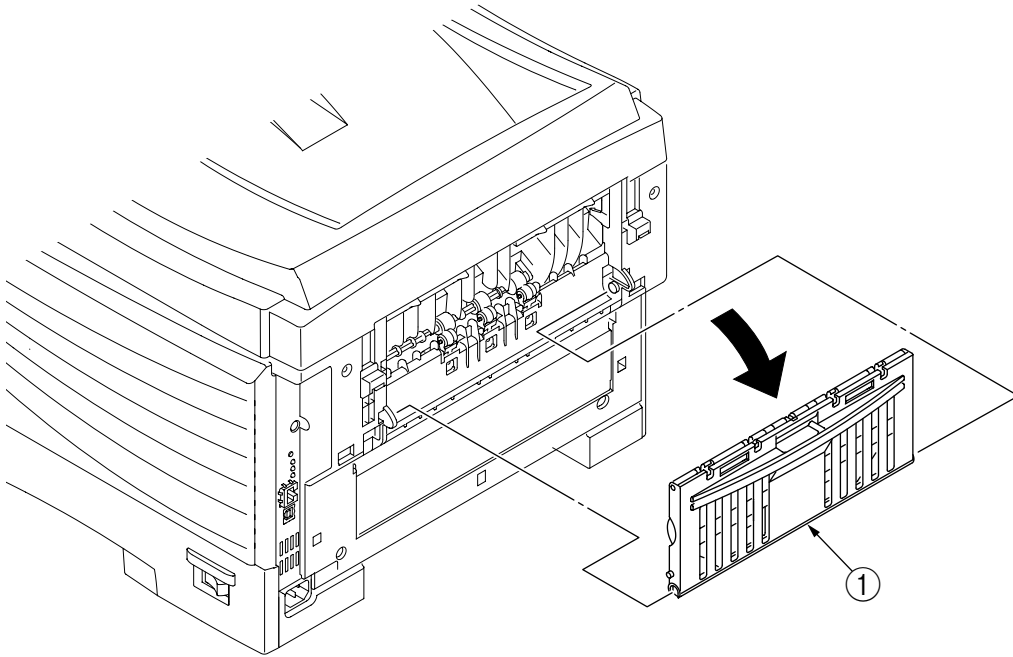


Figure 2-2-4 Face-Up Tray

2.2.5 Rear Cover

- (1) Remove the face-up tray (see section 2.2.4).
- (2) Remove the two screws (gold) ①.
- (3) Insert a flat-blade driver into the hole A to disengage the claw A, at each of the two places, and pull in an arc the rear cover ② in the direction of the allow A.
- (4) Push the lower part of the rear cover ② in the direction of the allow B to disengage the three claws B, then detach the rear-cover ② in the direction of the allow C.

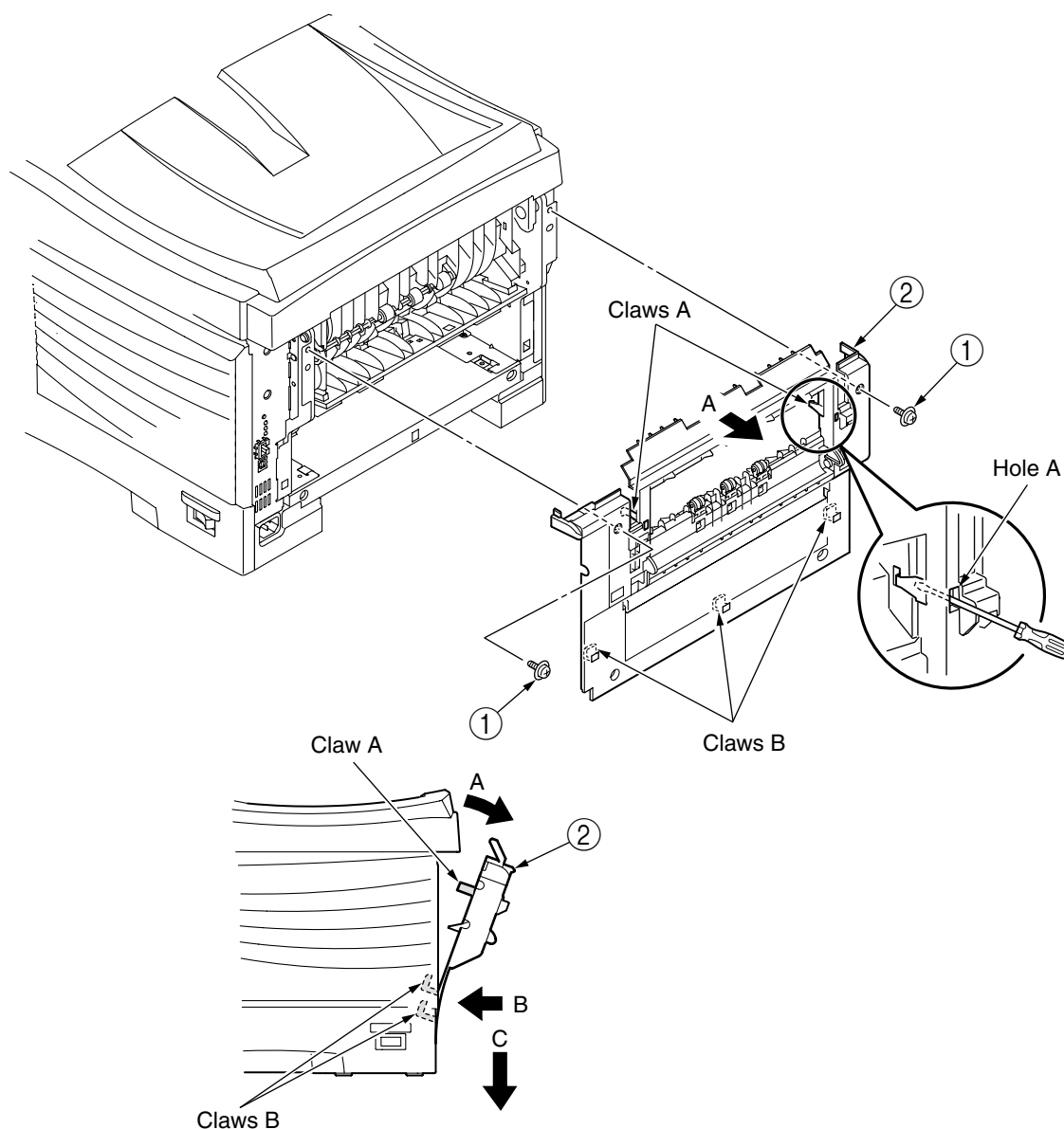


Figure 2-2-5 Rear Cover

2.2.6 LED Assy / LED Assy Springs

- (1) Open the top cover ①.
- (2) Remove the cable connection of, and disengage the two hooks of, the LED assy ② to detach the assy (the two springs ③ become detached together with the LED Assy ②).

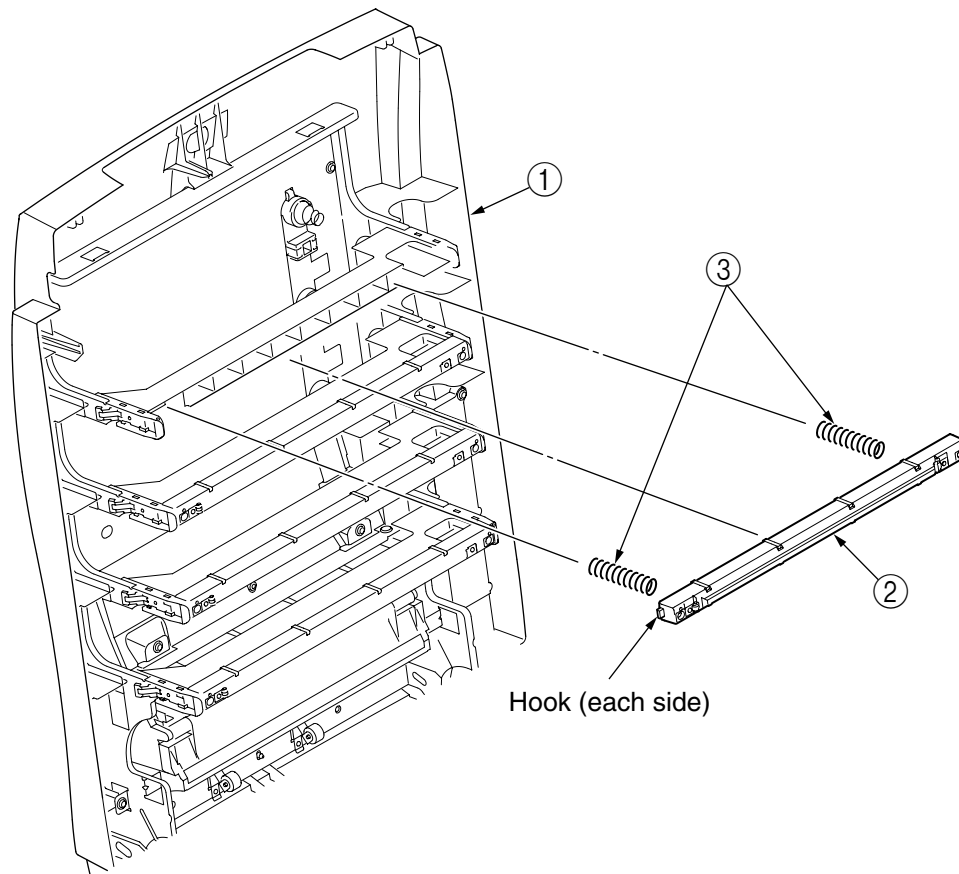


Figure 2-2-6 LED Assy / LED Assy Springs

2.2.7 Controller PWB

C5300

- (1) Remove the Print Engine Controller PWB (see section 2.2.8).
- (2) Remove the screw ① and then the head cable ②.
- (3) Remove the eight screws (gold) ③, then detach the controller PWB ④.

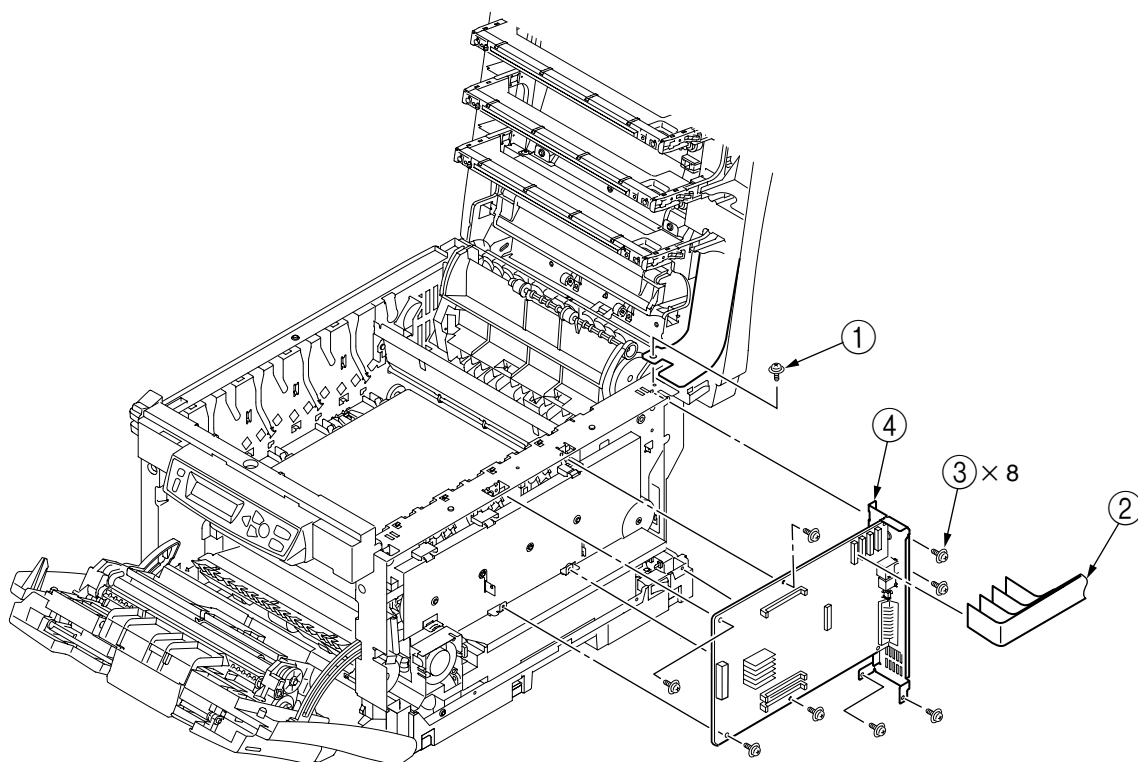


Figure 2-2-7-1 Controller PWB (C5300)

C5100

- (1) Open the top cover.
- (2) Remove the right side cover (see section 2.2.3).
- (3) Unscrew the three screws (gold) ① to remove the plate-shield assy (GDI) ②.
- (4) Remove the screw (gold) ③ and then the head cable ④.
- (5) Remove the six screws (gold) ⑤ and the connector ⑥, then detach the controller PWB ⑦.

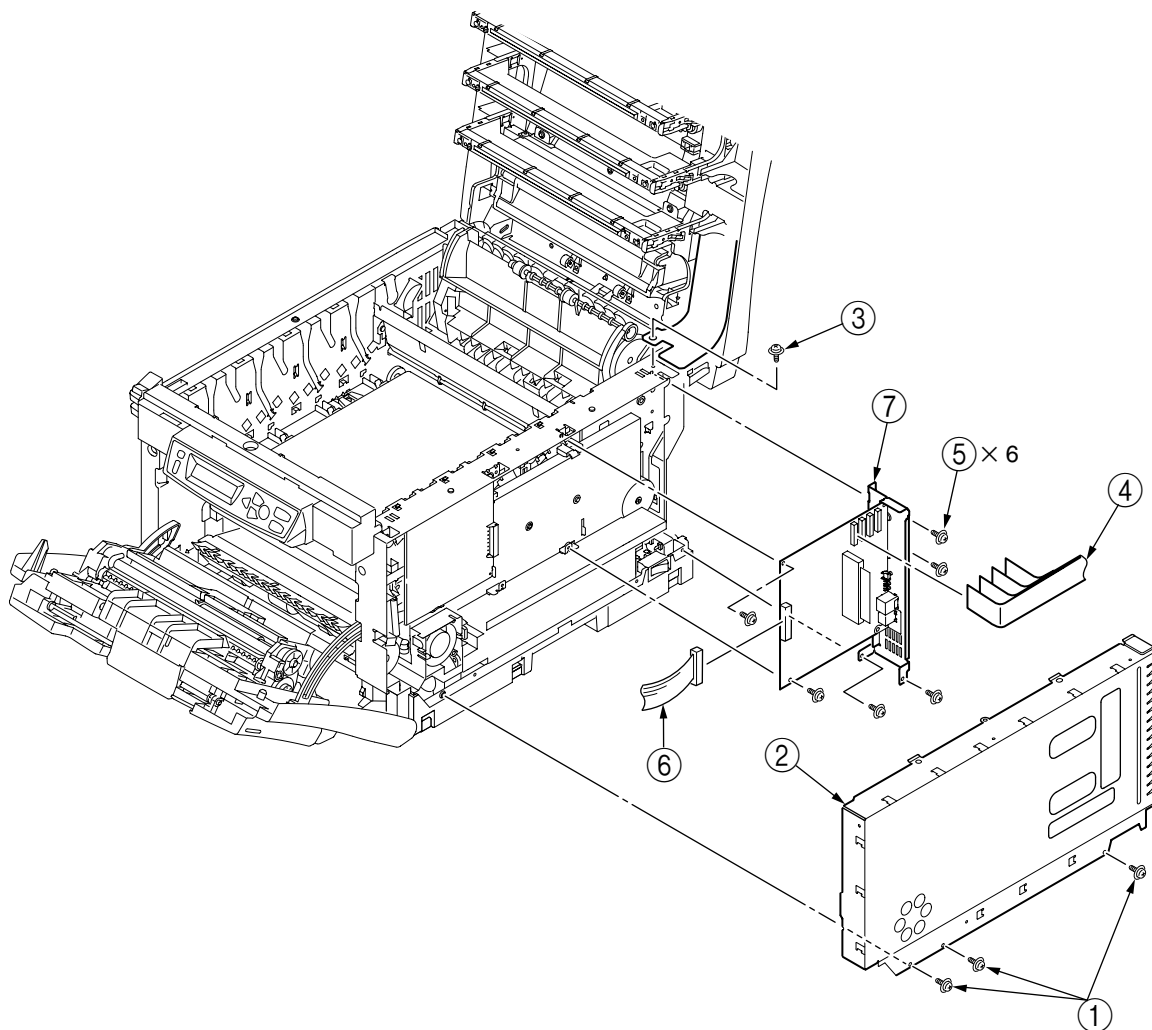


Figure 2-2-7-2 Controller PWB (C5100)

2.2.8 Print Engine Controller PWB

C5300

- (1) Open the top cover.
- (2) Remove the right side cover (see section 2.2.3).
- (3) Remove the connector ①, and disengage the two hooks ② of to detach the FAN (CU) ③.
- (4) Remove the three screws (gold) ④ to detach the plate shield assy (PCL) ⑤.
- (5) Remove the three screws (gold) ⑥ and all the connectors to detach the print engine controller PWB ⑦.

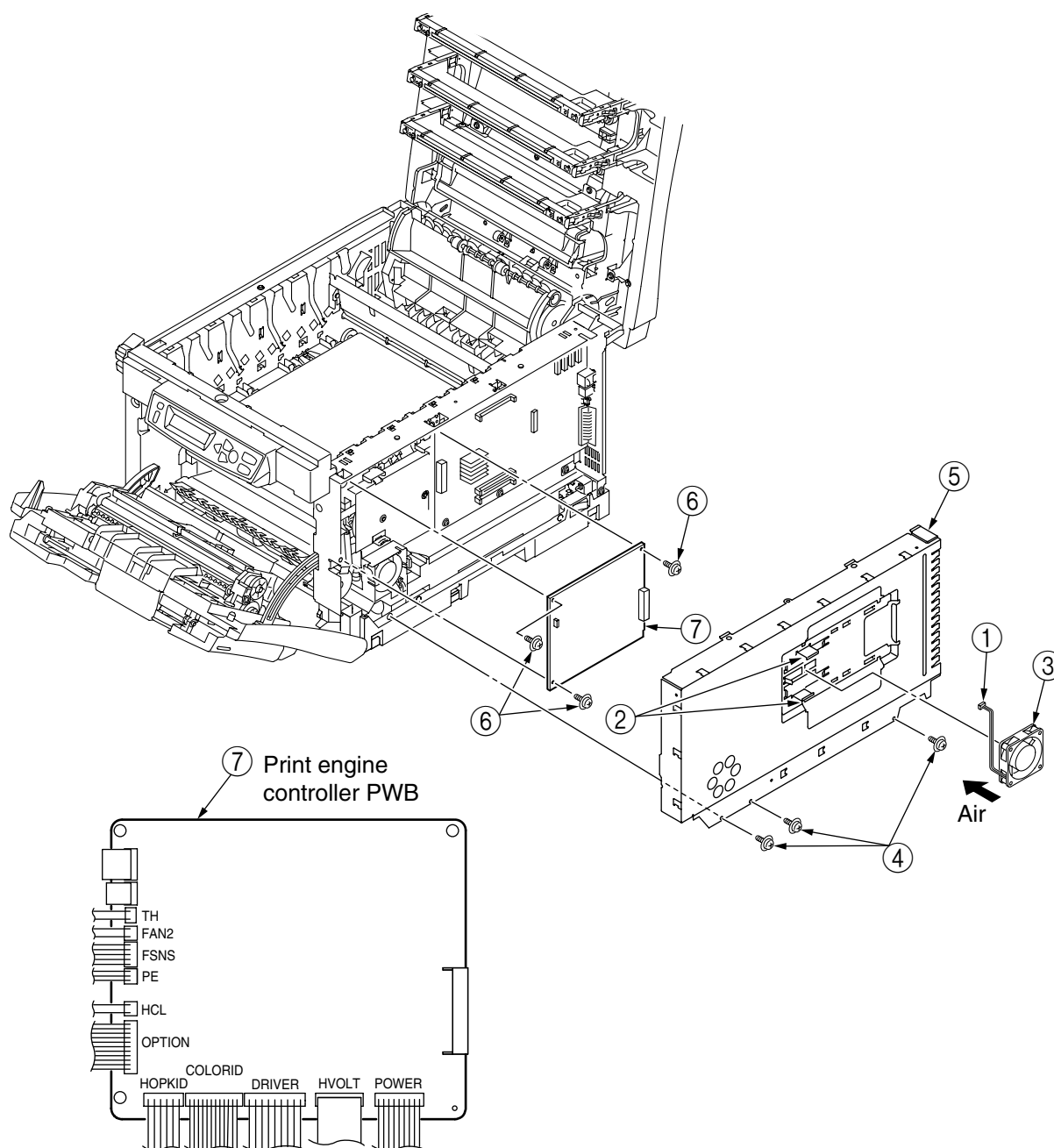


Figure 2-2-8-1 Print Engine Controller PWB (C5300)

C5100

- (1) Remove the plate shield assy (GDI) [see section 2.2.7, steps (1) to (3)].
- (2) Remove the three screws (gold) ① and all the connectors to detach the print engine controller PWB ②.

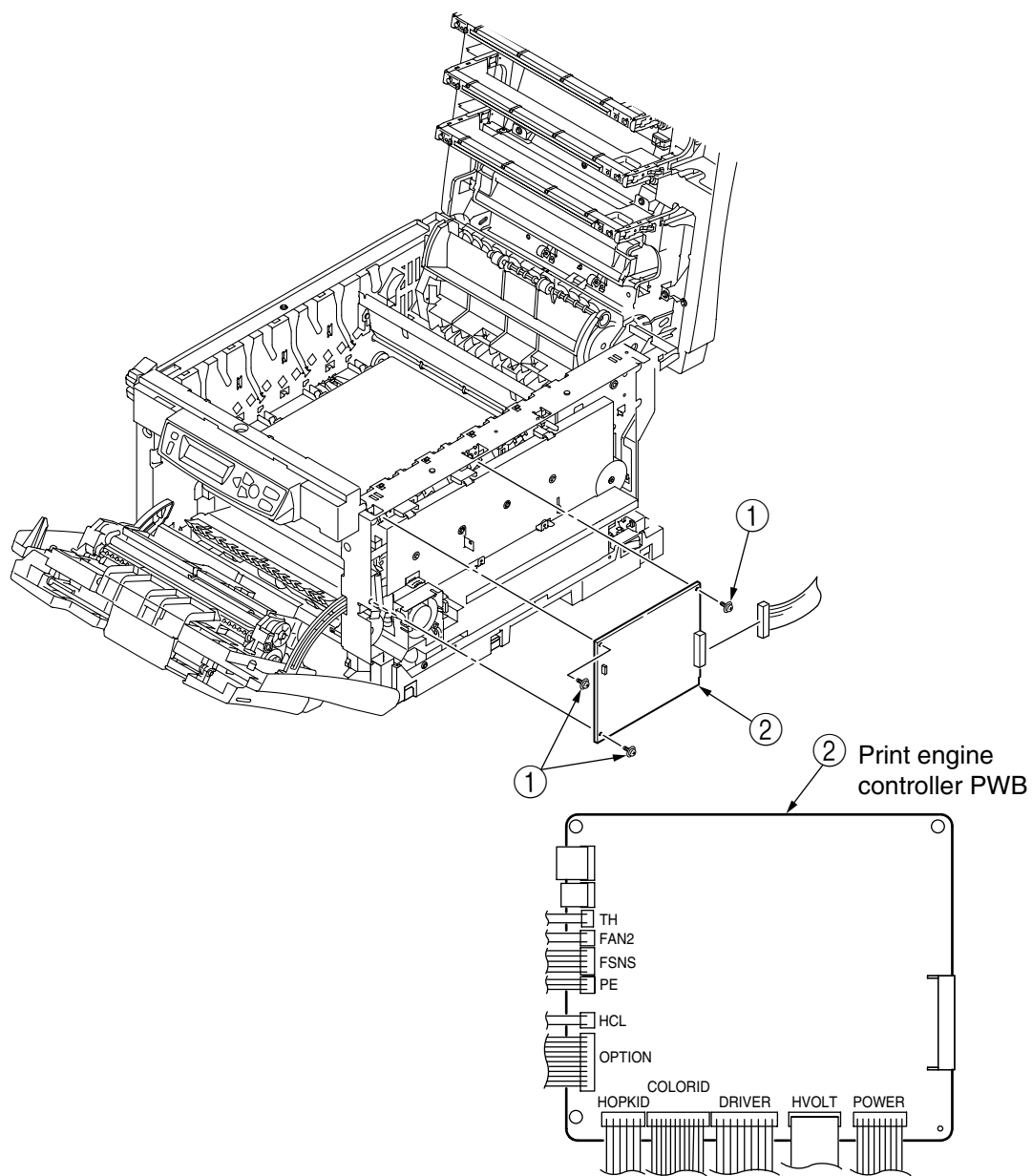


Figure 2-2-8-2 Print Engine Controller PWB (C5100)

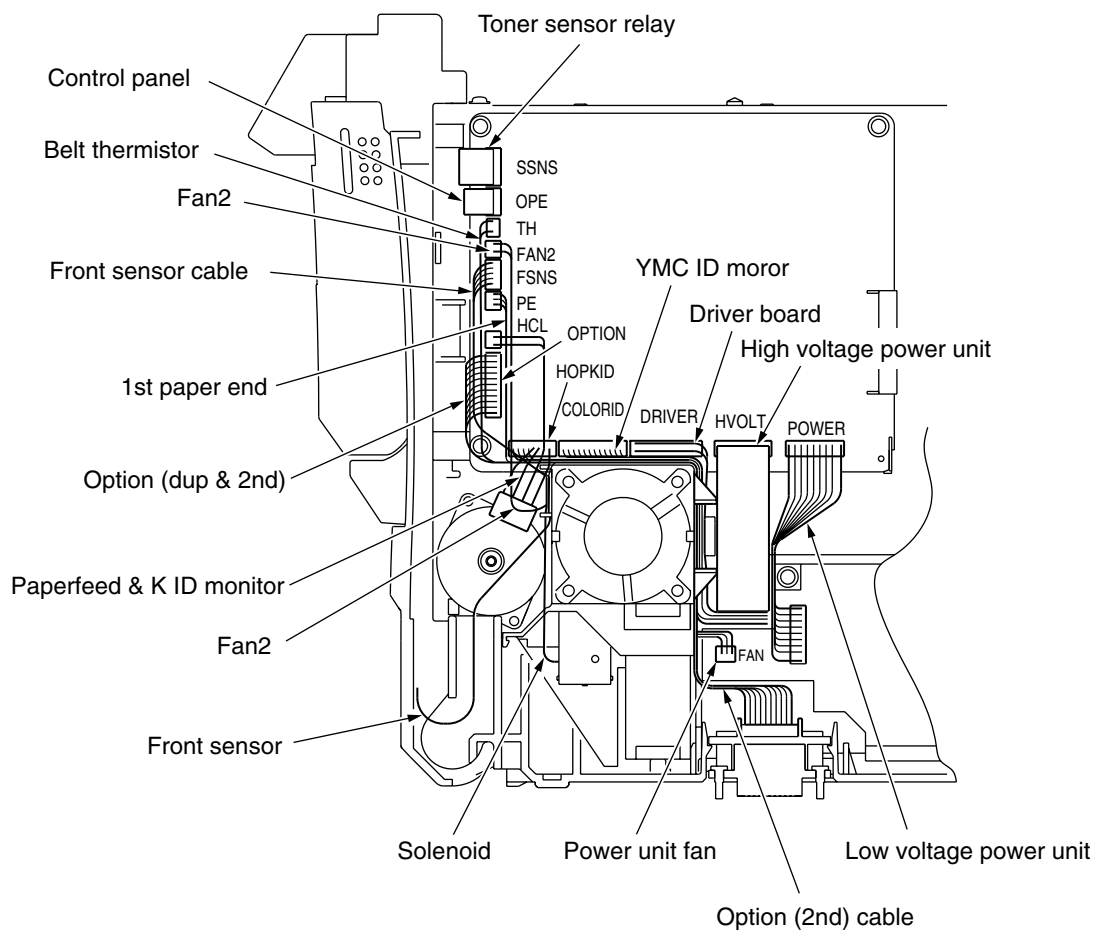


Figure 2-2-8-3 Print Engine Controller Board Cable Route

2.2.9 Top Cover Unit.

- (1) Remove the top cover (see section 2.2.1).
- (2) Remove the left side cover (see section 2.2.2).
- (3) Remove the right side cover (see section 2.2.3).
- (4) Remove the rear side cover (see section 2.2.5).
- (5) Remove the plate-shield assy (GDI) [see section 2.2.7, step (2)].
- (6) Remove the two E-shaped rings ① and the two springs - torsion ②, then detach the top cover unit ③.

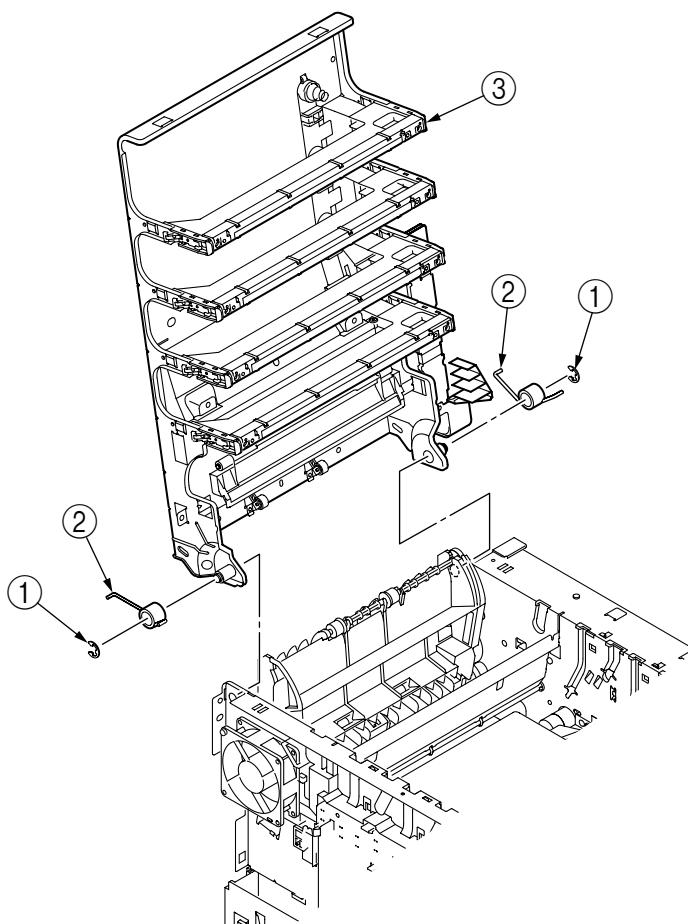


Figure 2-2-9 Top Cover Unit

2.2.10 Controller Panel Assy

- (1) Open the top cover.
- (2) Open the feeder unit.
- (3) Remove the right side cover (see section 2.2.3).
- (4) Remove the plate-shield assy (GDI) [see section 2.2.7, step (2)].
- (5) Make control panel assy connector removal (see section 2.2.8).
- (6) Remove the four screws (gold) ①, then detach the control panel assy ②.

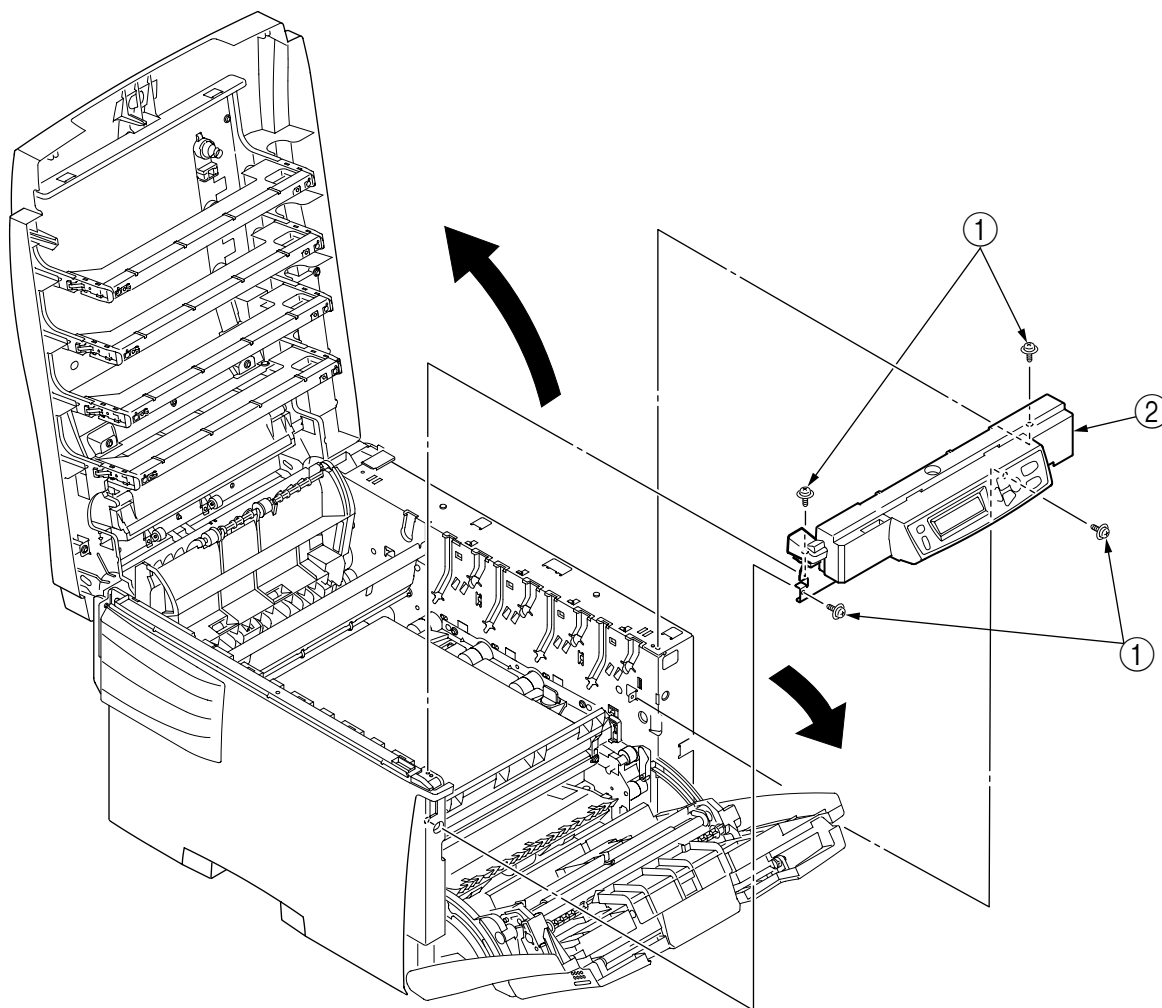


Figure 2-2-10 Control Panel Assy

2.2.11 Board RSP / Environment Sensor / Top Cover Handle

- (1) Remove the control panel assy (see section 2.2.10).
- (2) Disengage the two claws A of the lever-lock ② to remove the frame OP ①, and remove the lever-lock ② and the spring-compression ③.
- (3) Disengage the two claws B of the cover assy OP ④ to remove it, and remove the springs torsion ⑤.
- (4) Detach the board RSP ⑥, the environment sensor ⑦, the cable ⑧ and the harness ⑨.

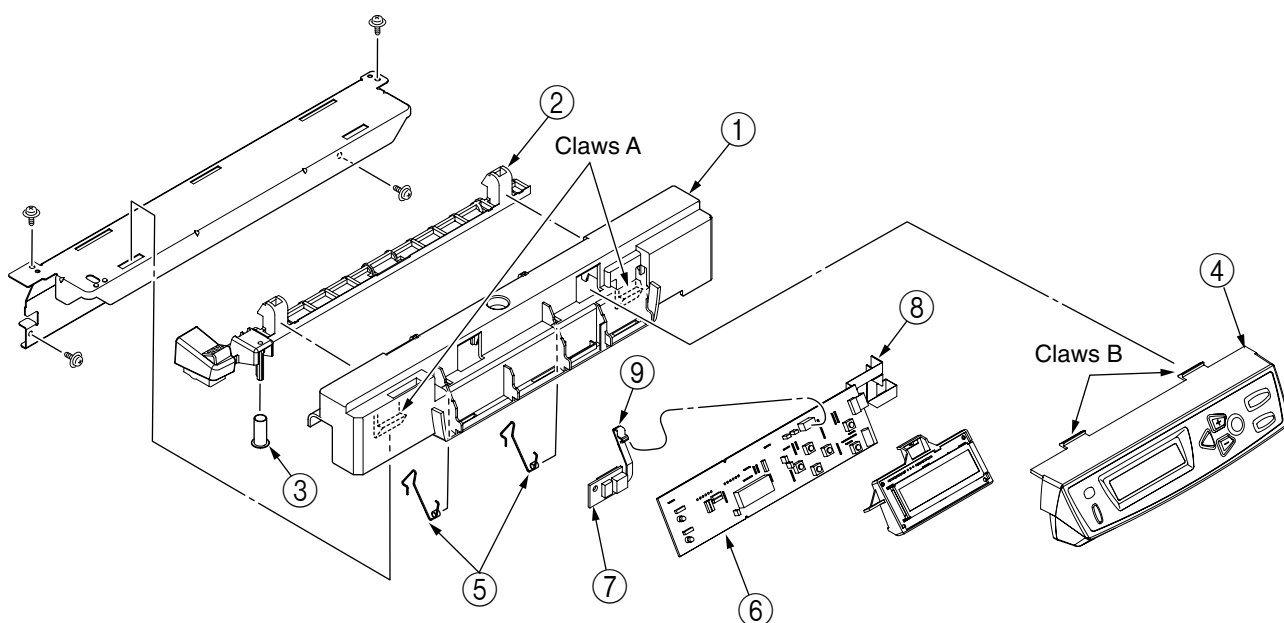
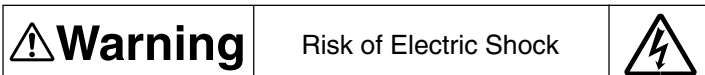


Figure 2-2-11 Board RSP / Environment Sensor / Top Cover Handle

2.2.12 Low Voltage Power Unit / FAN (ID) / FAN (PowL) / Hopping Motor / Fuser Motor



There is a risk of electric shock during replacement of the low voltage power supply.

Use insulating gloves or avoid direct contact with any conducting part of the power supply, and caution should be exercised during replacement.

The capacitor may take one minute to complete discharge after the AC cable is unplugged. Also, there is a possibility that the capacitor doesn't discharge because of a breakage of the PCB, etc., so remember the possibility of electric shock to avoid electric shock.

- (1) Remove the print controller PWB (see section 2.2.8).
- (2) Remove the controller PWB (see section 2.2.7).
- (3) Remove the film ① and the frame duct ② to demount the FAN (ID) ③.
- (4) Remove the two screws (gold) ④ and the four connectors to demount the POW unit ⑤.
- (5) Demount the FAN (PowL) ⑥ by releasing claw engagement.
- (6) Remove the two screws (black) ⑦ and the connector to detach the hopping motor ⑧.
- (7) Remove the two screws (black) ⑨ and the connector to detach the fuser motor ⑩.

Note! When reassembling the FAN (PowL) ⑥, check the attachment direction.

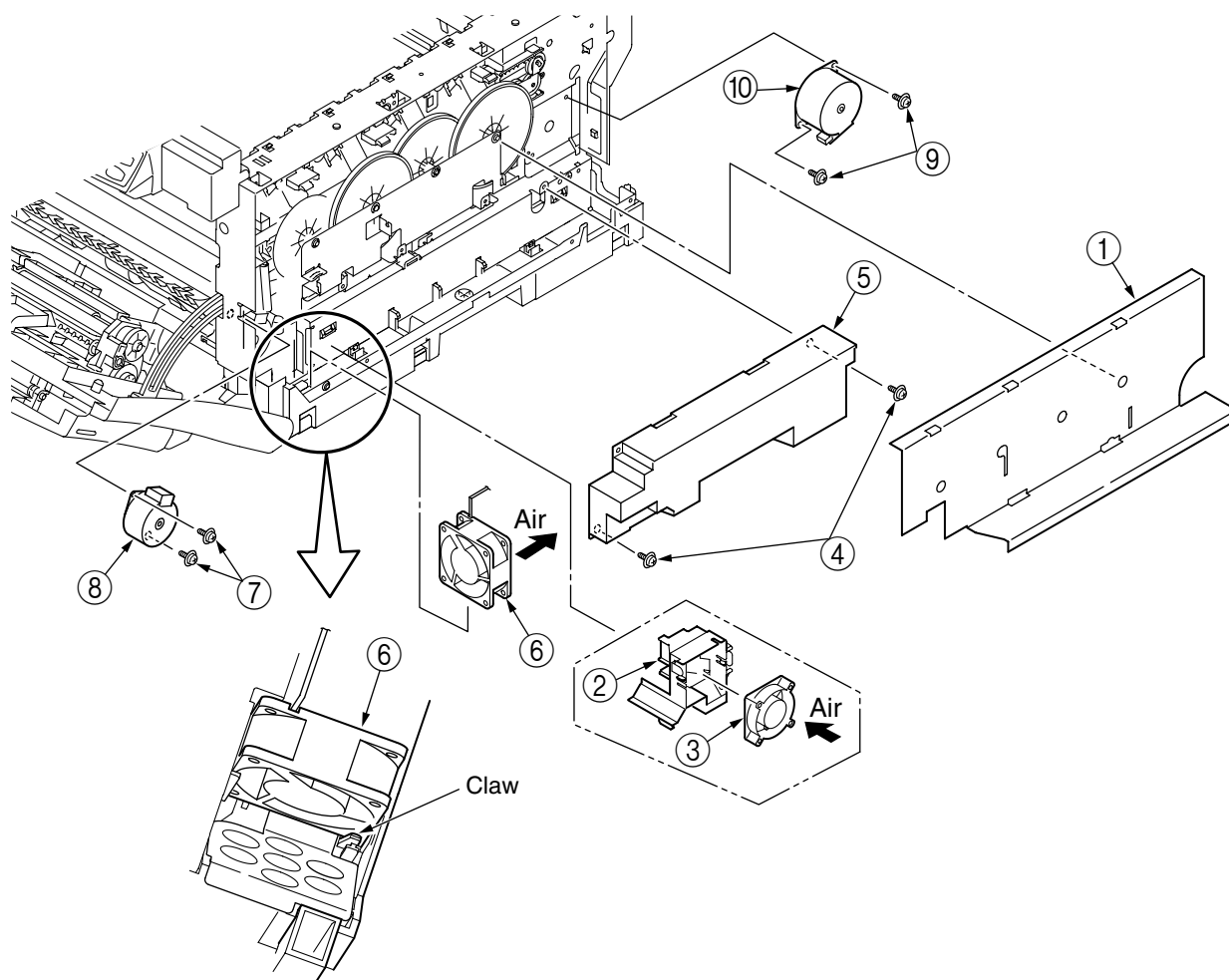


Figure 2-2-12 Low voltage Power Unit / FAN (ID) / FAN (PowL) / Hopping Motor / Fuser Motor

2.2.13 Board-PRD

- (1) Remove the right side cover (see section 2.2.3).
- (2) Remove the print engine controller PWB and the controller PWB (see sections 2.2.7 and 2.2.8).
- (3) Remove the film and the low voltage power unit (see section 2.2.12).
- (4) Remove the four screws (gold) ① and the two E-shaped snaps ② to remove the plate-outer ③.
- (5) Remove the gear-idle-ID - K ④, Y and C ⑤, each in one piece, and M ⑥, and the spring ⑦ of the solenoid.
- (6) Unlatch, and remove by sliding the guide assy - side R ⑧, the assy and detach the board-PRD ⑨ and the nine springs ⑩.

Note! When reassembling the board-PRD, do not forget to attach the spring of the solenoid ⑦.

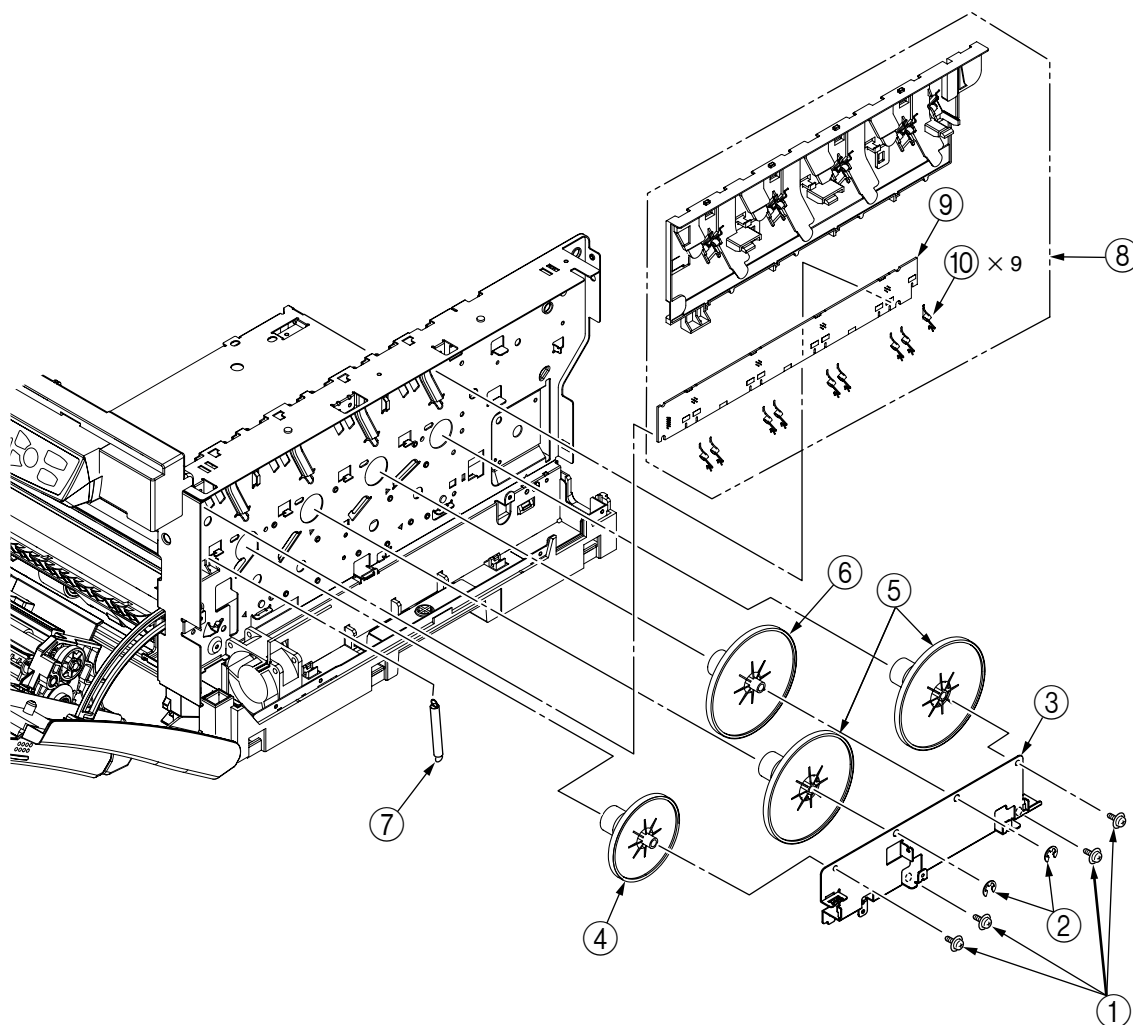


Figure 2-2-13 Board-PRD

2.2.14 Guide - Eject Assy / Color Registration Assy / Board-RSM

- (1) Remove the left side cover, the write side cover, the rear cover and the top cover unit (see sections 2.2.2, 2.2.3, 2.2.5 and 2.2.9).
- (2) Remove the engine controller PWB, the controller PWB and the film [see sections 2.2.7 and 2.2.8, and step (3) of section 2.2.12].
- (3) Unscrew the two screws (gold) ① to remove the plate-heat ②.
- (4) Remove the two springs - torsion ③ and disengage the two claws to remove the cover-driver ④.
- (5) Make screw (gold) ⑨ and connector removal to detach the board-RSM ⑩.
- (6) Make two-screw (gold) ⑤ removal to detach the color registration assy ⑥.
- (7) Make two-screw (gold) ⑦ removal to detach the guide eject assy ⑧.

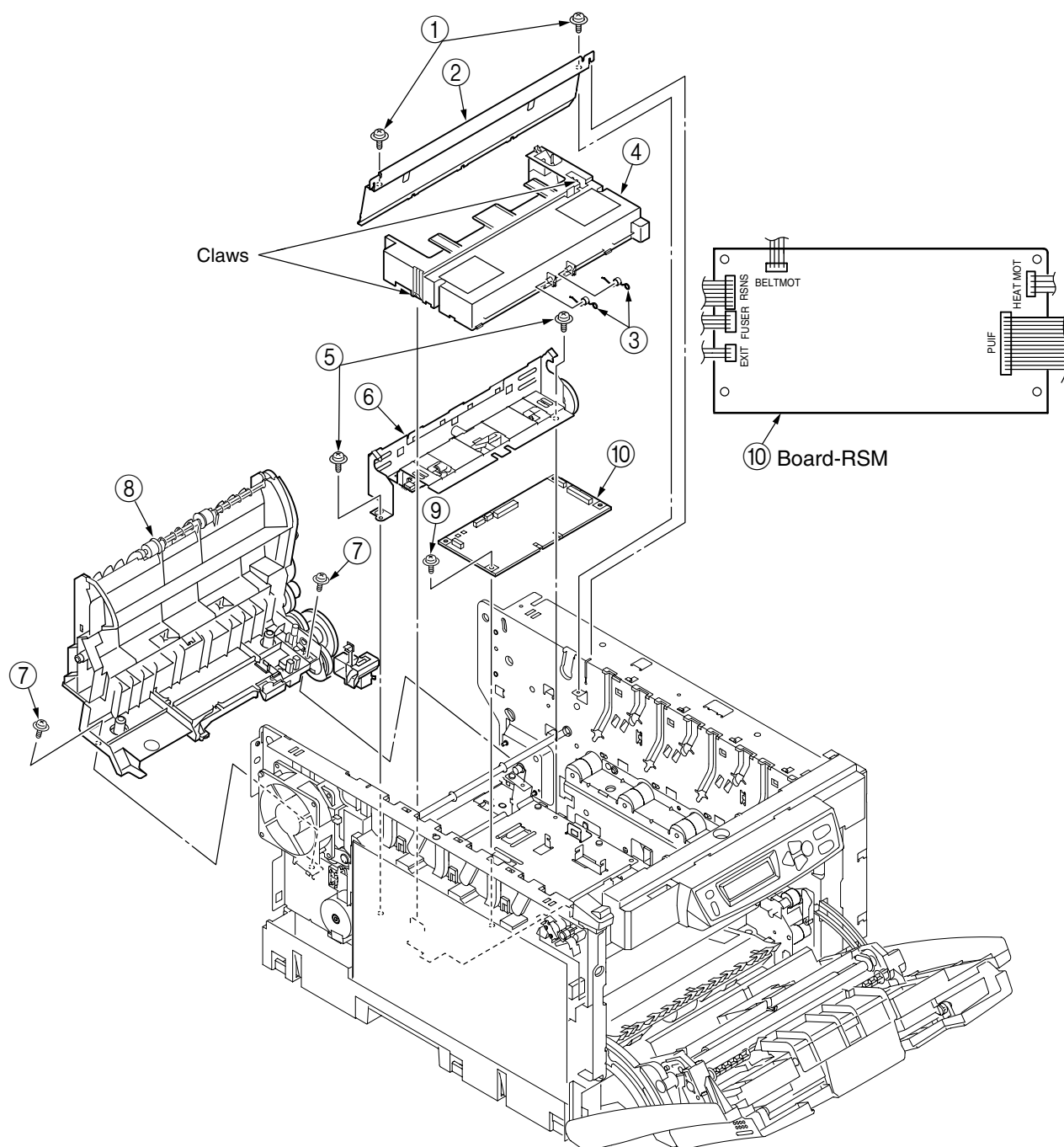


Figure 2-2-14-1 Guide - Eject Assy / Color Registration Assy / Board-RSM

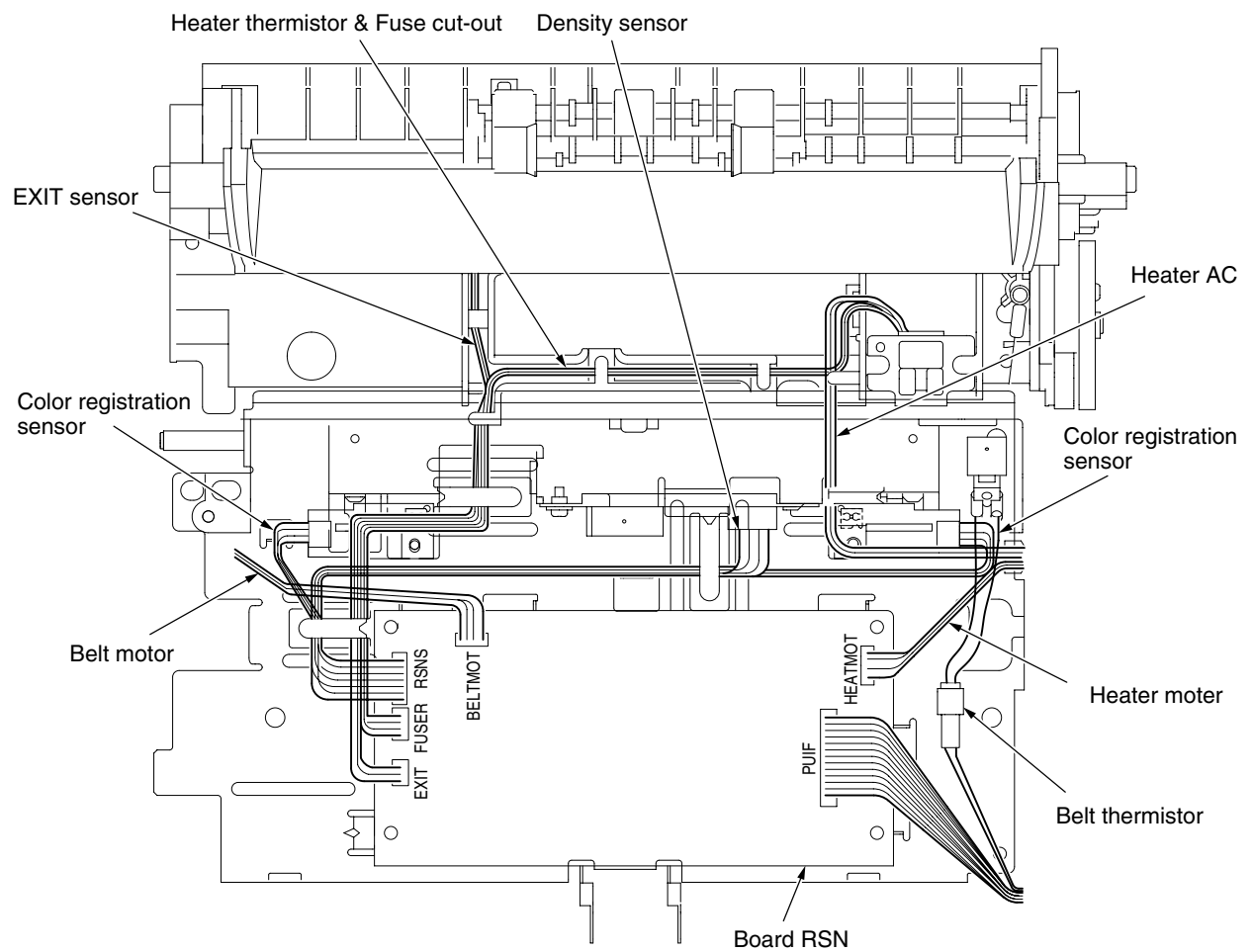


Figure 2-2-14-2 Board-RSM Cable Route

2.2.15 FAN (Fuser) / Belt Motor / High Voltage Power Supply Board / Cover Open Switch / Image Drum Up/Down Sensor

- (1) Remove the left side cover (see section 2.2.2).
- (2) Make screw (gold) ① and connector removal to detach the belt motor ②.
- (3) Remove the screw (gold) ③, disengage the latch and make connector removal to detach the high voltage power supply board ④.
- (4) Remove the two screws (gold) ⑤ to remove the cover-rear ⑥.
- (5) Remove the connector and, turning the FAN (Fuser) ⑦, detach the FAN (Fuser) ⑦.
- (6) Remove the connector and unlatch the cover open switch ⑧ to detach the switch.
- (7) Remove the connector and pull out the lock-piece ⑨ to detach the image drum up/down sensor ⑩.

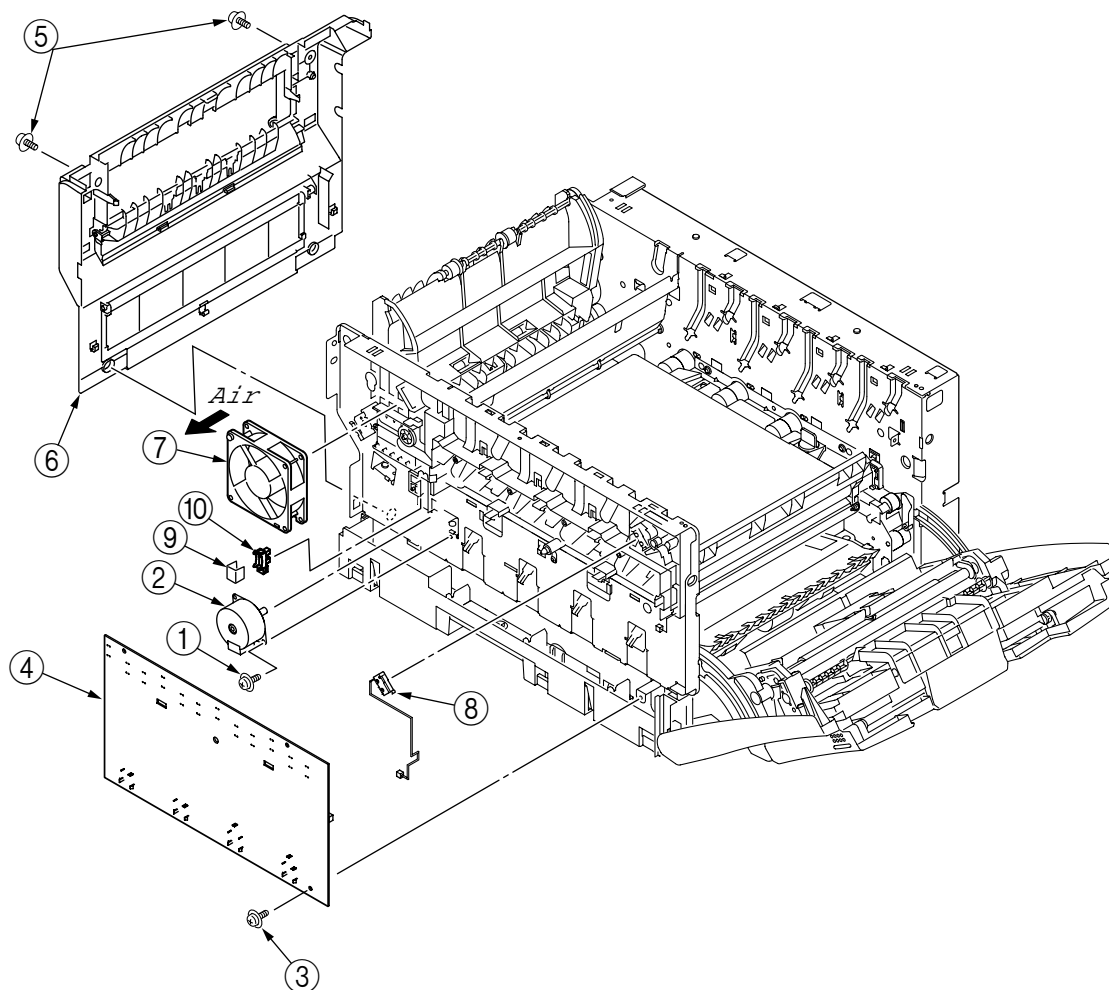


Figure 2-2-15 FAN (Fuser) / Belt Motor / High Voltage Power Supply Board / Cover Open Switch / Image Drum Up/Down Sensor

2.2.16 Multipurpose Tray (MPT) Assy

- (1) Open the MPT assy ①.
- (2) Remove the two stoppers and the two supports to detach the MPT assy ①.

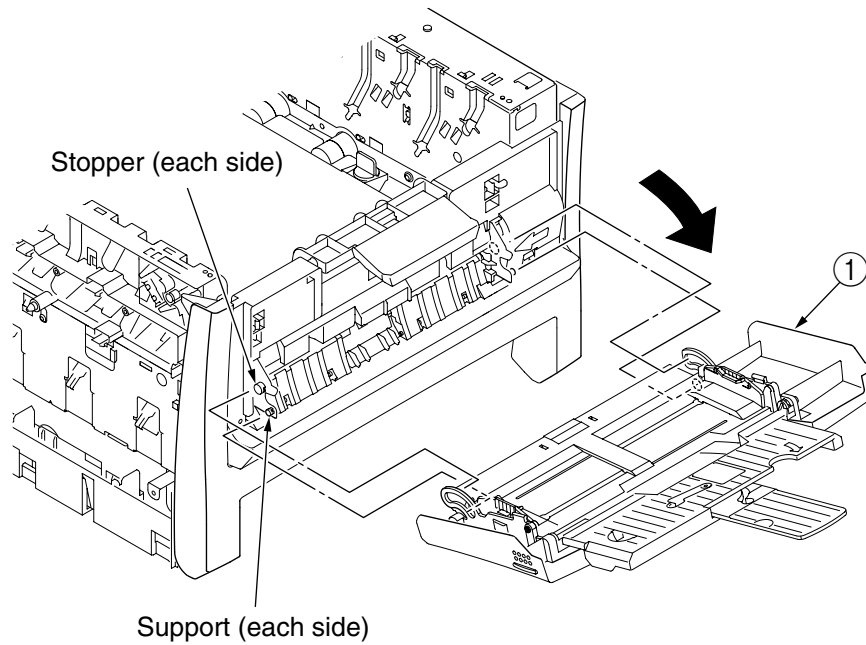


Figure 2-2-16 MPT Assy

2.2.17 Feeder Unit / Board-RSF / Multipurpose Tray (MPT) Hopping Roller / Multipurpose Tray (MPT) Frame Separator / Cover-Front

- (1) Open the top cover.
- (2) Remove the left side cover (see section 2.2.3).
- (3) Make plate-shield (GDI) and connector removal (see section 2.2.7).
- (4) Disengage the claws of the stay L ① and the stay R ②, sliding the feeder unit ③, detach the feeder unit.
- (5) Remove the cover sensor ④ by releasing claw engagement.
- (6) Make connector removal to detach the board-RSF ⑤.
- (7) Remove the lever ⑥ by turning it until it is unlocked.
- (8) Remove the two screws (black) ⑦ to remove the stay L ①.
- (9) Remove the four screws (black) ⑧, disengage the front two claws A and remove the feed Assy ⑨.
- (10) Remove the two lock shafts ⑩ and the two springs ⑪ and disengage the four claws to detach the hopping roller assy ⑫.
- (11) Remove the hopping roller shaft ⑬.
- (12) Remove the two supports to detach the MPT frame separator ⑭, and remove the spring ⑮.

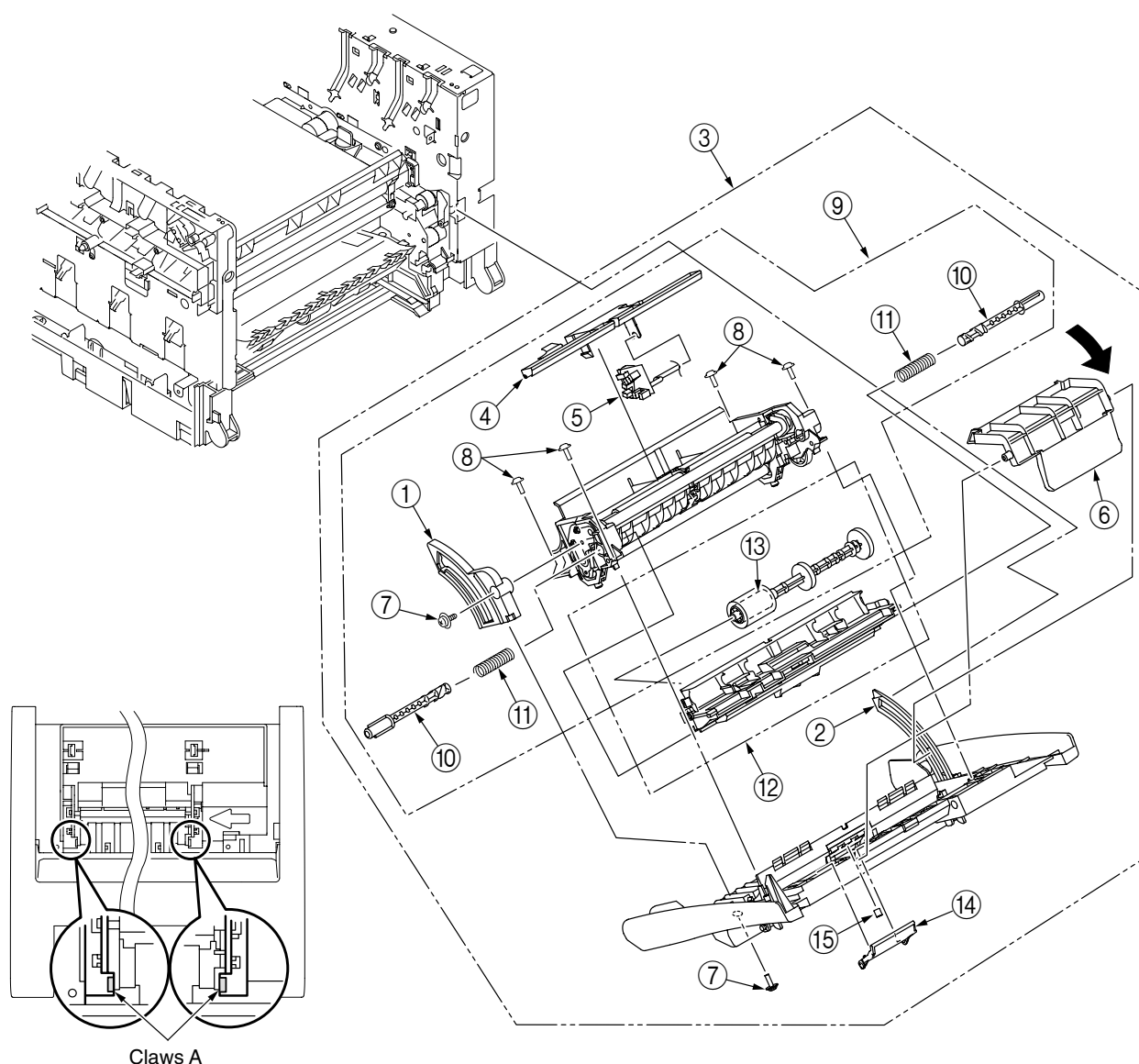


Figure 2-2-17 Feeder Unit / Board-RSF / MPT Hopping Roller / MPT Frame Separator / Cover-Front

2.2.18 Main Motors / Solenoid / Paper-End Sensor

- (1) Remove the left side cover, the right side cover, the rear side cover, the top cover unit and the feeder unit (see sections 2.2.2 , 2.2.3, 2.2.5, 2.2.9 and 2.2.17).
- (2) Remove the print engine controller PWB, the controller PWB and the film [see sections 2.2.7, 2.2.8 and 2.2.12 (3)].
- (3) Remove the fan (ID), the frame duct, the fan (Pow L) and the low voltage power unit (see section 2.2.12).
- (4) Remove the plate-heat, the eject assy, the cover-driver, the color-registration assy and the board-RSM (see section 2.2.14).
- (5) Unscrew the two screws (gold) ① to remove the plate-driver ②.
- (6) Disengage the latch to remove the cover-hopping ③.
- (7) Remove the fan (fuser) and the image drum up/down sensor ④ (see section 2.2.15).
- (8) Disengage the latch to remove the gear assy - planet ⑤, the shaft ⑥ and the three rollers ⑦.
- (9) Unscrew the two screws (gold) ⑧ to remove the side plate R assy ⑨.
- (10) Remove the four screws (gold) ⑩ and the two E rings ⑪, then remove the plate-outer ⑫, the gear-idle K ⑬, and Y and C ⑭, and M ⑮.
- (11) Remove the three screws (gold) ⑯ to remove the plate-lock-out-ID ⑳ and the plate-inner ㉑.
- (12) Remove the screws (gold) ⑲ (one screws each motor-ID ㉒) and the connectors, then uninstall the motors-ID ㉓.
- (13) Remove the screw (gold) ㉔ and the two screws (black) ㉕ to remove the gear assy - HP ㉖.
- (14) Remove the screw (gold) ㉗ to uninstall the solenoid ㉘.
- (15) Remove the spring ㉙, disengage the claw and remove the bushing ㉚, the hopping roller shaft ㉛ and the frame-hopping ㉜.
- (16) Detach the paper-end sensor ㉝ and the paper-end lever ㉞.

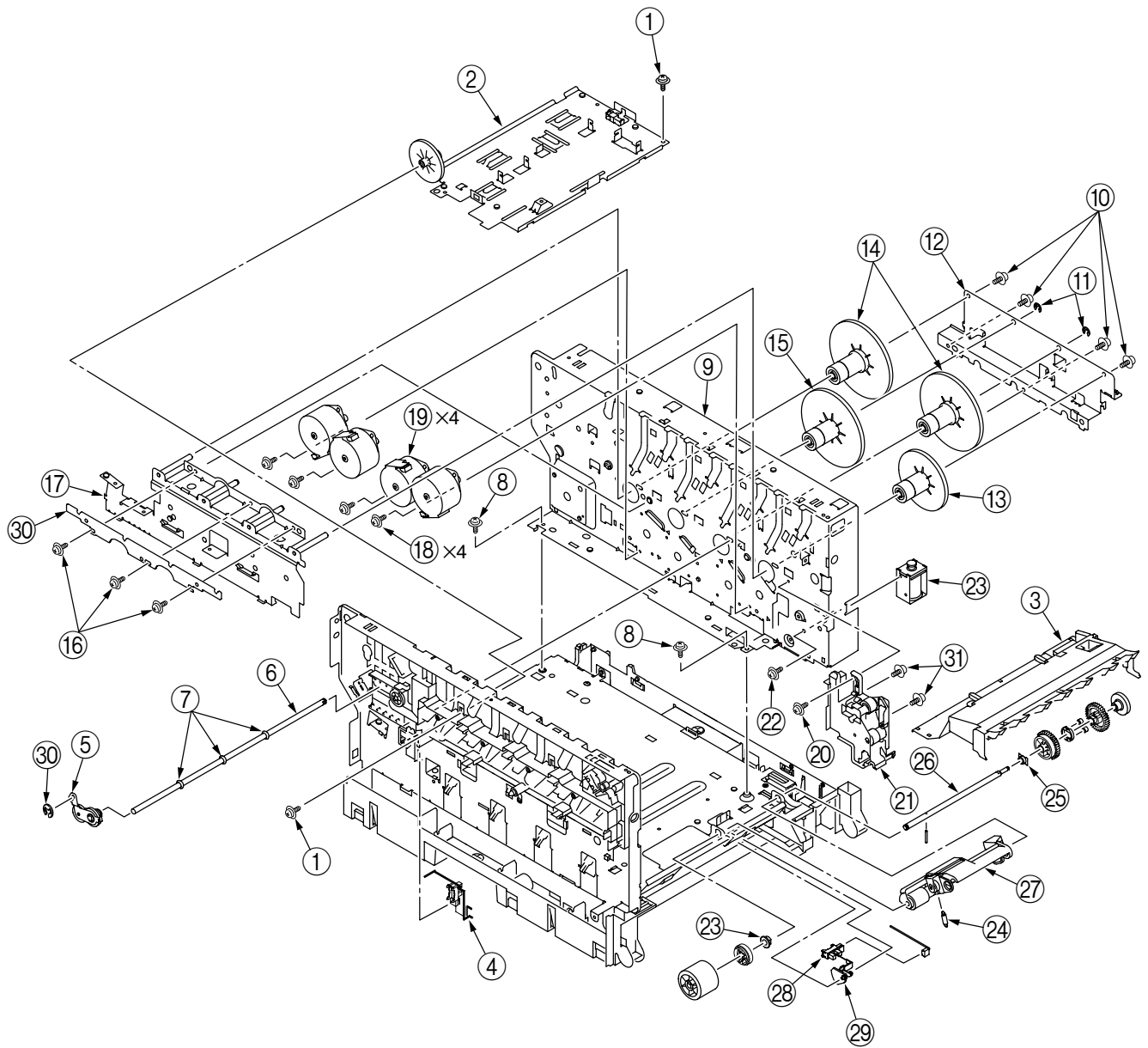


Figure 2-2-18 Main Motors / Solenoid / Paper-End Sensor

2.2.19 Feed Roller

- (1) Remove the cassette.
- (2) Unlatch and detach the feed roller ①.

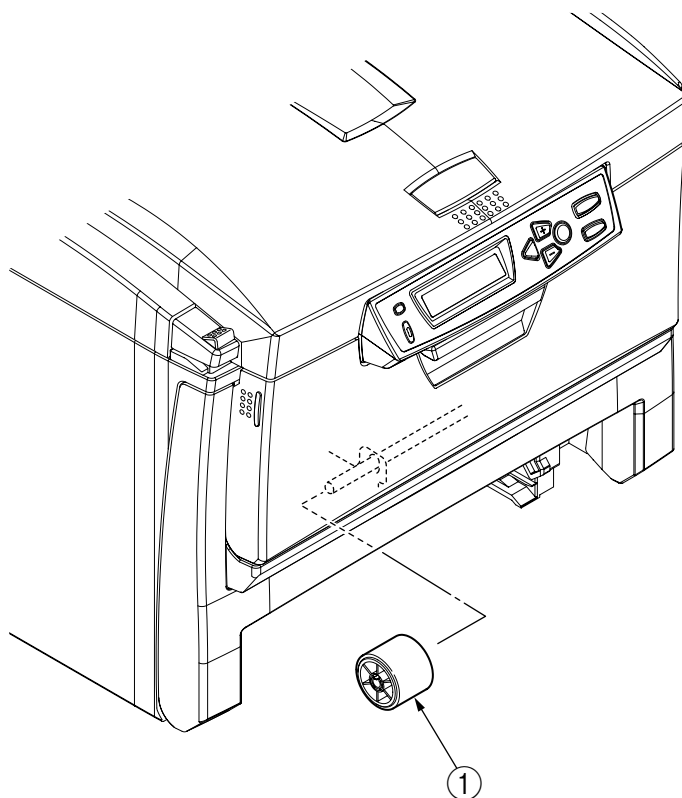


Figure 2-2-19 Feed Roller

2.2.20 Shaft Eject Assy (FU) / Shaft Eject Assy (FD) / Eject Sensor

- (1) Detach the eject assy ①.
- (2) Disengage the latch to separate the guide-eject-lower ② and the guide-eject-upper ③.
- (3) Remove the gear-idle-eject ④ and stopper-shaft ⑤, then detach the shaft assy - eject (FU) ⑥ and the shaft assy - eject (FD) ⑦.
- (4) Make connector and guide-cable R ⑧ removal.
- (5) Detach the lever - eject sensor ⑨ and then the eject sensor ⑩.

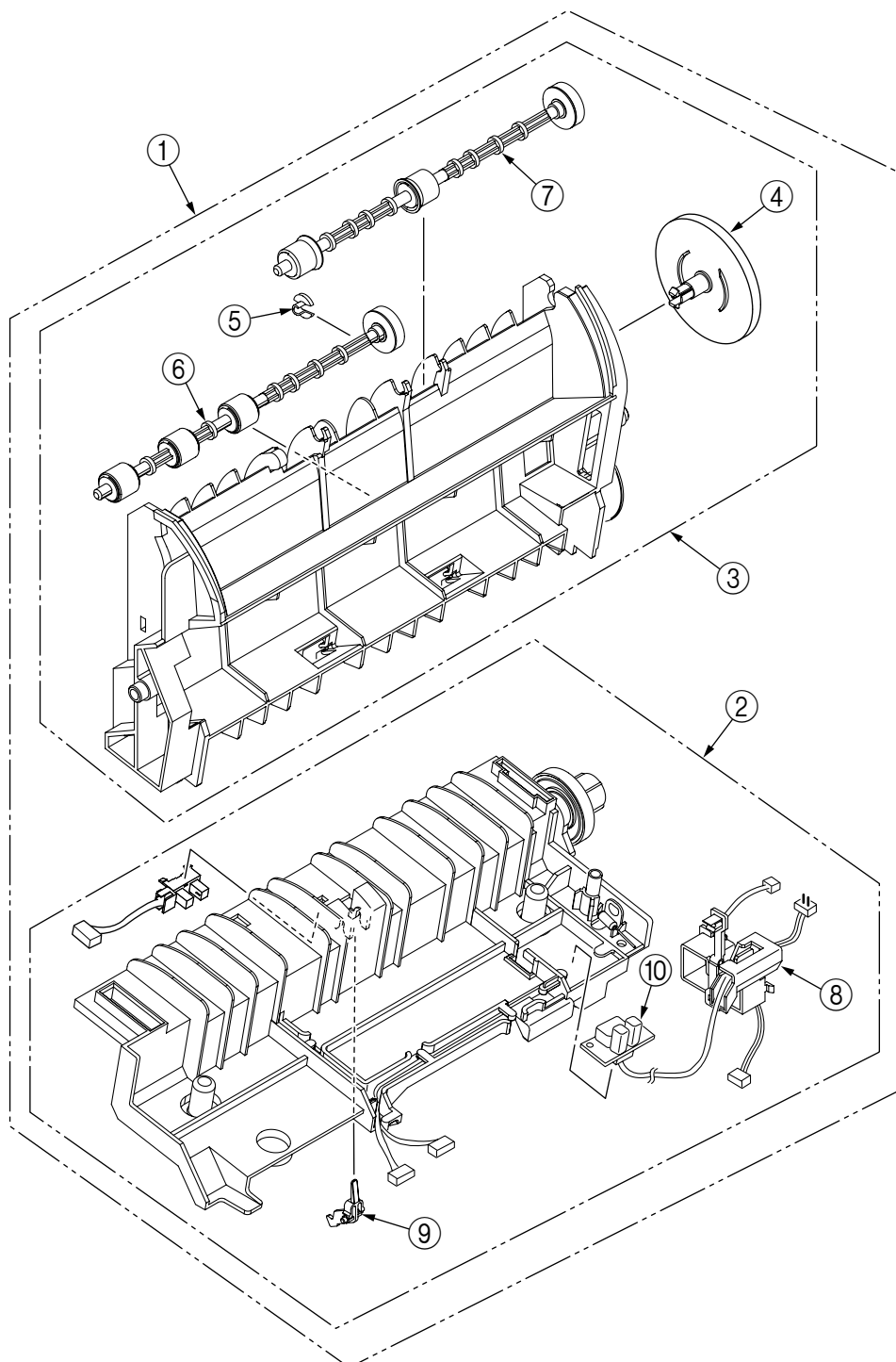


Figure 2-2-20 Shaft Eject Assy (FU) / Shaft Eject Assy (FD) / Eject Sensor

2.2.21 Fuser Unit

- (1) Open the top cover ①.
- (2) Rise the fuser unit lock levers (two blue portions) ② in the directions of the arrows to detach the fuser unit ③.

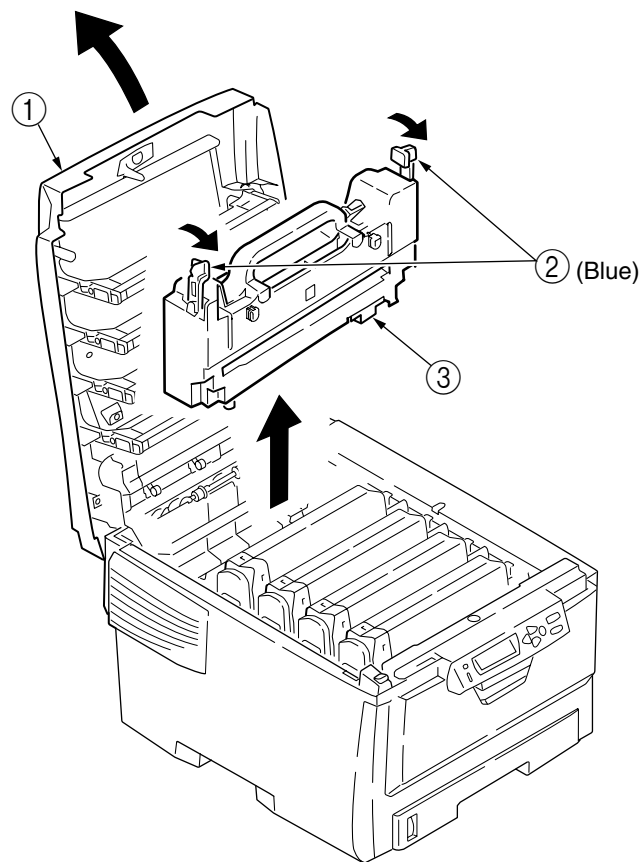



Figure 2-2-21 Fuser Unit

2.2.22 Belt Unit

- (1) Open the top cover ①.
- (2) Remove the image drum unit.
- (3) Turn the lock levers (two blue portions) ② in the direction of the arrow () and, grasping the lever (blue) ③, detach the belt unit ④.

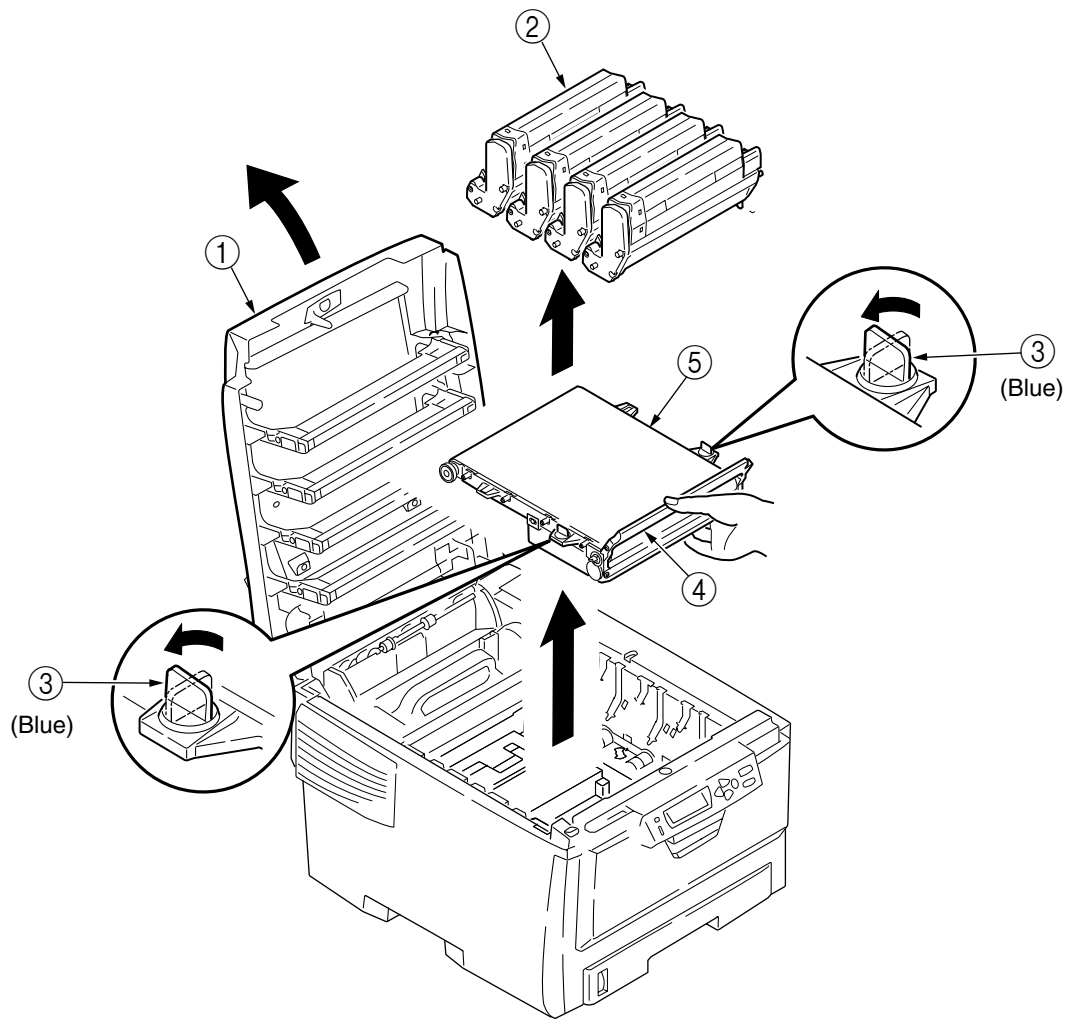


Figure 2-2-22 Belt unit

3. ADJUSTMENTS

Adjustments of C5300/C5100 printers can be made using maintenance utility software and key input from their operator panels. In addition to a standard menu, there is a maintenance menu in the display of their operator panels. The menu that serves the purpose of intended adjustment is to be selected.

3.0 Maintenance Utility

Maintenance utility software is used to make adjustments shown in table 3-4. Refer to the following for details on the maintenance utility software.

- 1) Maintenance utility system specification: 42514501FS01
- 2) Maintenance utility operating guide: 42514501FS02
- 3) Maintenance utility software programs:

* The programs can be downloaded from ftp//.

Applicable Operating System	File Name
Win9xMe (Japanese version)	MuWin_JPN_Win9x.zip
WinNT/2000/XP (Japanese version)	MuWin_JPN_WinNT.zip
Win9xMe (English version)	MuWin_ENU_Win9x.zip
WinNT/2000/XP (English version)	MuWin_ENU_WinNT.zip

Table 3-0 Maintenance Utility Adjustment Items

	Item	Maintenance Utility	Adjustment	Operation on Operator Panel
1	PU (RSN) Board Replacement	PU board replacement function	Reprogramming of PU board EEPROM settings	Unavailable
2	CU (ARC/OWL/SPA) Board Replacement	CU board replacement function	Reprogramming of CU board EEPROM settings	Unavailable
3	Consumable Counter Display	Counter value and remaining toner amount check function	Display of printer counter values and remaining toner amounts <ul style="list-style-type: none"> • Drum counters (Y, M, C and K) • Fuser counter • Belt counter • Toner counters (Y, M, C and K) • Remaining toner amounts (Y, M, C and K) • Half toner remaining (Y, M, C and K) 	Section 3.1.2.6
4	Test Printing	Test print function	Execution of printer's local print function	Section 3.1.2.5
5	Print Density Adjustment (Calibration Chip)		Print density calibration chip density input	Section 3.4
6	USB Software Update	USB software update function	USB software update	Unavailable
7	NIC Software Update	NIC software update function	NIC software update	Unavailable
8	NIC Web Page Update	NIC Web page update function	NIC Web page update	Unavailable
9	Mac Address Setting	Mac address setting function	Change of Mac addresses	Unavailable
10	Menu Setting Checking	Check function of each menu setting	Checking of menu settings that have been set inside printer	On menu map
11	Destination and PnP Information Checking	Destination and PnP information check function	Checking of printer destination, device ID and USB ID.	On menu map
12	Printer Information Checking	Printer information check function	Checking of printer Mac addresses and firmware versions	On menu map
13	Contained CPU and Memory Checking	Contained CPU and memory check function	Checking of information on CPU and on memory contained in printer	On menu map
14	Specified File Printing	Specified file print function	PRN file printing	Unavailable

3.1 Maintenance Modes and Their Functions

3.1.1 Maintenance Menu

Maintenance menu is contained in a standard menu category. Items that can be set from Maintenance menu are as follows:

Maintenance Menu

Values in shaded areas are initial settings.

Category	Operator Panel Display		Function
	Item (Upper Display)	Value (Lower Display)	
Maintenance Menu	RESET MENU	ENTER	Initializes menu settings.
	SAVE MENU SETTING(S)	ENTER	Stores current menu settings.
	RESTORE STORED MENU SETTING(S)	ENTER	Changes menu settings to stored ones. Displayed only when menu settings have been stored.
	POWER SAVING	ENABLE DISABLE	Sets Power Save mode enabled/disabled. Shift time to enable Power Save mode can be changed using "POWER SAVE SHIFT TIME" on "SYSTEM CONFIG. MENU".
	NORMAL PAPER BLACK SETTING	0 +1 +2 -2 -1	Corrects print nonuniformity due to temperature variation. With faded images, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value.
	NORMAL PAPER COLOR SETTING	0 +1 +2 -2 -1	Corrects print nonuniformity due to temperature variation. With faded images, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value.
	TRANSPARENCY BLACK SETTING	0 +1 +2 -2 -1	Corrects print nonuniformity due to temperature variation. With faded images on transparency sheets, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value.
	TRANSPARENCY COLOR SETTING	0 +1 +2 -2 -1	Corrects print nonuniformity due to temperature variation. With faded images on transparencies, change the value. With scattering or snowing images in print output of high print density, decrement the value. With faded images in print output of high print density, increment the value.

3.1.2 Operator panel

Operating descriptions on self-diagnosis are premised on the following operator panel layout.

For ODA



For OEL/AOS



For China



3.1.2.1 Operator panel display

Display

LCD (English) (□ means no display in upper line)	Ready LED	Attention LED	Description	Level
ONLINE .xxxx tttttt	ON	Varies	Shows on-line status.	Normal
OFFLINE .xxxx tttttt	OFF	Varies	Shows off-line status.	Normal
FILE ACCESSING	Varies	Varies	Device accessing during the operation of accounting system operating.	Normal
DATA ARRIVE .xxxx tttttt	Varies	Varies	Data receiving, process not started yet. Displayed mainly during PJL process without text print data or during job spooling.	Normal
PROCESSING .xxxx	Blink	Varies	Data receiving or output processing.	Normal
DATA .xxxx	Varies	Varies	Un-printed data remains in Buffer. Waiting for data to follow.	Normal
PRINTING tttttt	Varies	Varies	A printer is printing.	Normal
PRINT DEMO PAGE	Varies	Varies	Performing Demo Print. Not displayed when printing user defined demo-pages (Shows "PRINTING" in this case)	Normal
PRINT FONT	Varies	Varies	Printing Fonts. Same as in all fonts (PCL,PSE,IBMPPR,EPSON FX)	Normal
PRINT MENU MAP	Varies	Varies	Printing Menu Map.	Normal
PRINT FILE LIST	Varies	Varies	Printing File List.	Normal
PRINT ERROR LOG	Varies	Varies	Printing Error Logs.	Normal
□ COLLATE COPY iii/jjj	Varies	Varies	Collate printing. iii: The number of copy in printing. jjj: The total number of printing. When the total number of printing is 1, it is a normal printing display.	Normal
□ COPY kkkk/llll	Varies	Varies	Copy printing. kkk: The number of pages in printing. lll: The total number of printing. When the total number of copy is 1, it is a normal printing display.	Normal
CANCELING JOB	Blink	Varies	Indicates that job cancellation has been instructed and data is being ignored until the job completion. (Display for a certain period (seconds) is requested. If it immediately disappears, cannot tell whether or not it was cancelled.)	Normal
CANCELING JOB (USER DENIED)			Job cancelled because of no permission for printing (Related to JobAccount) 1. Job received from a user not permitted to print. 2. Color Job received from a user not permitted to print in color.	

LCD (English) (□ means no display in upper line)	Ready LED	Attention LED	Description	Level
CANCELING JOB (BUFFER FULL)	Blink	Varies	Job cancelled because the log saving area in printer is running out and "Job cancelled when log full occurs" is set. (Related to JobAccount)	Normal
CANCELING JOB (JAM)			Job cancelled and the data is being discarded till the end of the Job because JAM occurs when "JAM RECOVERY" is set to OFF.	
□ WARMING UP	Varies	Varies	Warming up.	Normal
□ OPTIMIZING TEMP	Varies	Varies	Because the drum temperature is high, printing is temporarily suspended. Or, the printer is waiting for implementation of heat measure for media switch from narrow paper to wide paper.	Normal
□ POWER SAVE	Varies	Varies	A printer is in power save mode. Displayed in a combination of other message in the first line.	Normal
□ ADJUSTING COLOR	Varies	Varies	Auto registration adjusting in progress	Normal
□ ADJUSTING DENSITY	Varies	Varies	Auto tone adjusting in progress	Normal
□ ADJUSTING DENSITY	Varies	Varies	Auto density adjusting in progress	Normal
			Downloading PU firmware (Displayed messages are output by the PU firmware.)	Normal
□ ORDER * TONER	Varies	ON	Toner low. Displayed in a combination of other message in the first line. If "LOW TONER=STOP" is set in menu, ATTENTION LED blinks and the printer shifts to Off-line. When a user presses On-line switch, ATTENTION LED (stops blinking and) lights on and printing can continue until TONER EMPTY. Y M C K This message is also displayed when * waste toner box is near full.	Warning
□ * WASTE TONER FULL.REPLACE TONER	Varies	ON	The printer can still print. Allows printing about 50 pages of A4 size at 5% density, then stops with Waste Toner Full Error(414,415,416) again. The LCD message indicates that the Waste Toner box is full. Y M C	Warning
PRESS ONLINE SW INVALID DATA	Varies	Varies	Invalid data was received. Press the On-line switch and eliminate the warning. Displayed when unsupported PDL command is received or a spool command is received without HDD.	Warning

LCD (English) (□ means no display in upper line)	Ready LED	Attention LED	Description	Level
□ PS3 EMUL ERROR	Blink	Varies	Interpreter has detected an error due to the following reason. Receive data after this is ignored until the job completion. When the job is completely received, this is automatically cleared. - The job has a grammatical error. - The page is complicated, and VM was used up.	Warning
□ ORDER * IMAGE DRUM	Varies	ON	Drum near life. (warning) Displayed in a combination of other message in the first line. Y M C K	Warning
□ ORDER FUSER	Varies	ON	Fuser unit near life. (Warning)	Warning
□ ORDER BELT	Varies	ON	Belt unit near life. (warning)	Warning
□ FUSER LIFE	Varies	ON	If a fuser life error occurs and a user opens/closes the cover or reboots the printer, this phenomenon happens. When the printer printed 500 pages, the error occurs again.	Warning
□ BELT LIFE	Varies	ON	If a belt life error occurs and a user opens/closes the cover or reboots the printer, this phenomenon happens. When the printer printed 500 pages, the error occurs again.	Warning
□ * TONER EMPTY	Varies	ON	If a toner empty occurs and a user opens/closes the cover or reboots the printer, this phenomenon happens. When the printer printed approx. 50 pages (A4, density 5%), the error occurs again. Y M C K	Warning
□ * DRUM LIFE	Varies	ON	If a drum life error occurs and a user opens/closes the cover or reboots the printer, this phenomenon happens. When the printer printed 500 pages, the error occurs again. Y M C K	Warning
□ BELT REFLEX ERROR	Varies	ON	Belt Reflex Check error. This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warning
□ DENSITY SHUTTER ERROR2			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warning
□ DENSITY SHUTTER ERROR1			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warning

LCD (English) (□ means no display in upper line)	Ready LED	Attention LED	Description	Level
□ DENSITY COLOR CALIBRATION ERROR			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ DENSITY COLOR SENSOR ERROR			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ DENSITY BLACK CALIBRATION ERROR			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ DENSITY BLACK SENSOR ERROR			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ * IMAGE DRUM SMEAR ERROR			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.) Y,M,C,K	Warn- ing
□ * LOW DENSITY ERROR			This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.) Y,M,C,K	Warn- ing
□ REGISTRATION ERROR 1	Varies	ON	Registration error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ SENSOR CALIBRATION ERROR	Varies	ON	Sensor calibration error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION ERROR 2	Varies	ON	Gamma error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION ERROR 3	Varies	ON	Gamma error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION ERROR 4	Varies	ON	Gamma error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION ERROR 5	Varies	ON	Gamma error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION SENSOR ERROR 2	Varies	ON	Registration sensor error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION SENSOR ERROR 3	Varies	ON	Registration sensor error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing
□ REGISTRATION SENSOR ERROR 4	Varies	ON	Registration sensor error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warn- ing

LCD (English) (□ means no display in upper line)	Ready LED	Attention LED	Description	Level
□ REGISTRATION SENSOR ERROR 5	Varies	ON	Registration sensor error This is not a user-level error. (If it happens, change the mode to Shipping mode. See the Maintenance Manual.)	Warning
□ ttttt EMPTY	Varies	Varies	“ttttt” tray is empty. Treated as Warning until printing to the empty tray is designated. MPTRAY EMPTY is displayed when paper feed from MPTRAY is attempted, but the tray is empty. When printing of the job is completed, this warning disappears if a user opens/closes the cover or reboots the printer.	Warning
□ HARD DISK FULL	Varies	ON	Disk-full has occurred. Because this is a temporary warning, it remains until the end of the job and disappears.	Warning
□ DISK WRITE DISABLED	Varies	ON	An attempt to write in a read-only file was done. Because this is a temporary warning, it remains until the end of the job and disappears.	Warning
□ COLLATE FAIL	Varies	OFF	The data of MOPY is memory-full.	Warning
□ INVALID ID. JOB REJECTED	Varies	ON	Job cancelled because of no permission for printing (Related to JobAccount) Cleared by pressing ON-LINE switch. 1. Job received from a user not permitted to print 2. Color Job received from a user not permitted to print in color.	Warning
□ LOG BUFFER FULL. JOB REJECTED			Job cancelled because the log saving area in printer is running out and “Job cancelled when log full occurs” is set. (Related to JobAccount)Cleared by pressing ON-LINE switch.	
□ DISK USE FAILED	Varies	ON	A disk error other than No.29/30 has occurred. Operation that does not involve a disk is available.	Warning
□	Varies	Varies	An error occurred when renewing PU firmware. This is not a user-level error. (Displayed messages are output by the PU firmware.)	Warning
LOAD mmm IN MP TRAY AND PRESS ONLINE SWITCH	ON	OFF	Manual paper feed is required. Manually insert the paper shown by mmm.	Warning

3.1.3 Printing on Controller-Equipped Printer on a Standalone Basis

Menu Map Printing

Information, including program versions, controller block configuration and network configuration, is printed.

Operation:

1. Press the MENU+ key several times to display "INFORMATION MENU";
2. Press the ENTER key to display "PRINT MENU/EXECUTE"; and
3. Press the ENTER key, or

Alternatively press the push switch located above the network connector on the back of the printer main body for two seconds or more.

Demo Printing

Demonstration patterns for destinations stored in ROM are printed.

Operation:

1. Press the MENU+ key several times to display "INFORMATION MENU".
2. Press the ENTER key.
3. Press the MENU+ key several times to display "DEMO1/EXECUTE".
4. Press the ENTER key.

3.2 Adjustments after Parts Replacement

Adjustments required after parts replacement are described below. The adjustment and correction of color registration must be performed without exception.

Replaced Part	Adjustment
LED Head	Not required.
Image Drum Cartridge (Any of Y, M, C and K)	Not required.
Fuser Unit	Not required.
Belt Unit	Not required.
PU (RSN Board)	Copying of EEPROM data *Note
CU (ARC Board / OWL Board / SPA Board)	Copying of EEPROM data *Note
Shutter	Setting of correction value for density detection calibration chip

Note: When a PU (RSN board) is replaced with a new one, data may not be read out of its EEPROM. In such cases, color balance must be adjusted.

3.2.1 Precautions in replacing an engine controller board

When replacing an engine controller board (RSN PWB), read EEPROM data from the board and copy it onto a new board, using maintenance utility software. When SERVICE CALL 105 (an engine EEPROM error) appears on the operator panel, engine controller board replacement to a new board should be made.

The version read function (fuse cut-off) is disabled when EEPROM data cannot be copied from a engine controller board (RSN PWB) being replaced, or after an engine controller board is replaced with a new one. In such cases, printer mode switching from Factory to Shipping must be processed by the PjL command.

[Description]

1. Sending an appropriate PjL file to the printer to establish Shipping mode.
2. Turning printer's power on or sending reboot command (PjL file) to the printer to complete setting.

[Procedure]

Perform the following steps in response to MS-DOS prompts:

1. Execute Copy /b Pjl_ship.bin prn.
2. Execute Copy /b Pjl_reboot.bin prn, or turn the printer off and on again.

[PjL Files Required]

1. Pjl_ship.bin
2. Pjl_reboot.bin

Note! Note that, because EEPROM (engine controller board) replacement clears information on the life of a belt unit, toner, image drum units, etc., errors are introduced in the control of the life until they are replaced after the EEPROM replacement. Counts cleared upon EEPROM replacement are as follows. The counts except Total Sheets Fed are cleared, the errors being eliminated, at the point where the units for which the counts are provided have been replaced with new ones.

Item	Description	Count Description
Fuser unit	Fuser unit life count	A value converted on a A4-size-paper basis from number of pages printed (prints) after installation of a new fuser unit
Belt unit	Belt unit life count	A value converted on a A4-size-paper basis from number of pages impressed (images) after installation of a new belt unit
Image drum unit - Black Image drum unit - Yellow Image drum unit - Magenta Image drum unit - Cyan	Respective life counts of image drum units	Values converted on a A4-size-paper basis from numbers of revolutions after installation of new image drum units
Toner - Black Toner - Yellow Toner - Magenta Toner - Cyan	Respective counts of toner amounts used	Numbers of dots printed
Total number of sheets fed	Printer life count	Total number of sheets fed
Pages - Black Pages - Yellow Pages - Magenta Pages - Cyan	Respective numbers of pages impressed (images) with image drums	Numbers of pages impressed (images) from installation of new image drum units.

3.2.2 EEPROM Setting after ARC Board / OWL Board / SPA Board Replacement

When ARC/OWL/SPA board replacement, data in user-used board EEPROM is to be copied onto new boards using maintenance utility software (to allow new boards to inherit user-defined information and font installation information). When user-used EEPROMs are unusable due to its problem, new boards, whose destinations and must have been set, are to be used. Also new-EEPROM destinations must have been set.

3.3 Print Density Adjustment

Auto Density Adjustment mode is set to [AUTO] at printer shipment, which may cause print density to be out of its appropriate balance during printer operation. In such cases, the density is to be adjusted.

Notes! Print density adjustment is to be performed with printers at rest. Do not adjust print density during printer warming-up.

1. Press the MENU+ or MENU- key several times to show [COLOR MENU], and press the ENTER key.
2. Press the MENU+ or MENU- key to display [DENSITY ADJUSTMENT/ RESET].
3. Press the ENTER key.

Auto print density adjustment starts.

4. REGULAR MAINTENANCE

4.1 Parts Replaced Regularly

Users are recommended to replace parts periodically according to the table below. (Print quality cannot be assured and damages may occur, when the parts are not replaced.)

Part Name	Time of Replacement	Condition for Replacement	Adjustment (after replacement)
Toner cartridge	When [REPLACE TONEER] is displayed.	5,000 pages are printed. (5% duty)	
ID	When [REPLACE IMEGE DRUM] is displayed.	15,000 pages are printed. (3P/J)	
Fuser unit	When [REPLACE FUSER] is displayed.	45,000 pages are printed.	
Belt unit	When [REPLACE BELT] is displayed.	50,000 pages are impressed. (3P/J)	

Parts are replaced periodically by users.

4.2 Cleaning

Clean the internal and external sections of the printer with waste and a small vacuum cleaner as required.

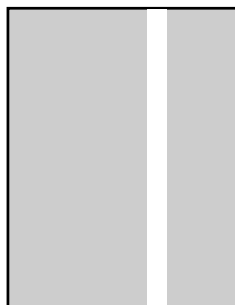
Note: Do not touch the image drum terminals, the LED lens array, and the LED head connector.

4.3 Cleaning the LED Lens Array

Clean the LED head array while white bands or lines (white-out, faint print) appear in the vertical direction on a printed page.

Note: Be sure to clean the LED lens array with the LED lens array cleaner. (the LED head cleaner is packed together with the toner cartridge.)

White band, white stripe
(Void or light printing)



4.4 Cleaning the Pick-up Roller

Clean the pick-up roller if lines appear in the vertical direction on the printed page.

Note: Use a soft cloth in order to avoid scratching the roller surface.

5. TROUBLESHOOTING PROCEDURES

5.1 Precautions before troubleshooting

- (1) Confirm the basic inspection items described in the user manual.
- (2) Obtain as much information regarding the problem from the user as possible.
- (3) Check the printer in a condition close to that upon generating the problem.

5.2 Precautions before handling an abnormal image

- (1) Confirm that the environment for using this printer is appropriate.
- (2) Confirm that consumables (toner, drum cartridge) are replaced appropriately.
- (3) Confirm that paper is accurate. Refer to paper specifications.
- (4) Confirm that the drum cartridge is set appropriately.

5.3 Precautions upon handling an abnormal image

- (1) Do not touch or allow foreign objects to contact the OPC drum surface.
- (2) Do not expose the OPC drum to direct sunlight.
- (3) Do not touch the fuser unit as it is heated significantly.
- (4) Do not expose the image drum to light for longer than five minutes in room temperature.

5.4 Preparing for Troubleshooting

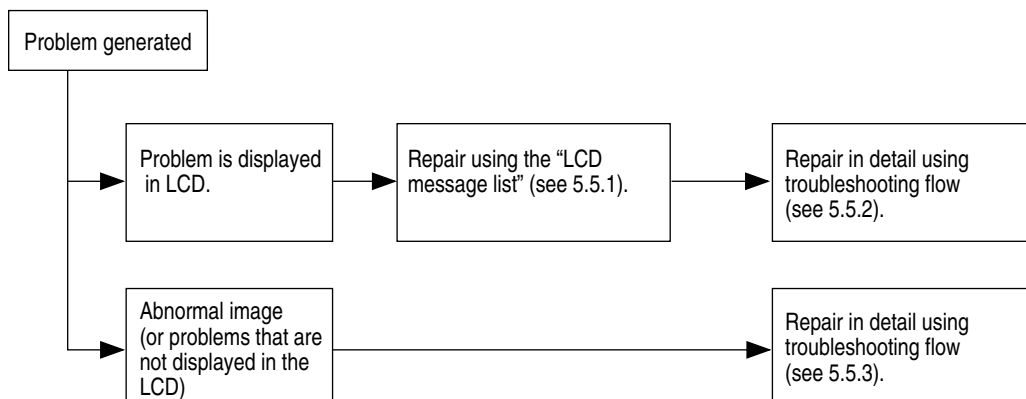
(1) Operator panel display

Problems that occur with the printer are indicated in the LCD.

Apply proper remedies according to the message indicated in the LCD.

5.5 Troubleshooting Procedure

Confirm the problem in the following method when the printer generates a problem.



5.5.1 LCD message list

When the printer detects a non-recoverable error, the following service call error is displayed in the LCD.

Service call

nnn: error

Note: nnn is an error code.

When [Service call] is displayed, error information that corresponds to the error code appears in the bottom line in the LCD. Be sure to make a note of, and report to related departments, the descriptive information (such as numeric values that indicate addresses), which is used for troubleshooting. Error codes, their definitions and remedies are described in Table 5-1-1.

Table 5-1-1 Operator Alarm (1/5)

Display on Operator Panel	Ready LED	Attention LED	Description	Code nnn
LOAD mmm/ppp AND PRESS ONLINE SWITCH nnn: ttttt MEDIA MISMATCH	OFF	Blink	The media type in the tray does not match the print data. Load mmm/ppp paper in ttttt tray. MPTRAY (MP Tray) TRAY1 (Tray 1) TRAY2 (Tray 2)	460 461 462
LOAD mmm/ppp AND PRESS ONLINE SWITCH nnn: ttttt SIZE MISMATCH	OFF	Blink	The media size or both media size and media type in the tray does not match the print data. Load mmmmmmmmm/ppppppp paper in ttttt tray. MPTRAY (MP Tray) TRAY1 (Tray 1) TRAY2 (Tray 2)	460 461 462
NETWORK CONFIG WRITING	ON	ON	Saving the Network configuration to Flash memory when setting item which relate to Network was changed.	
NETWORK INITIAL WAIT A MOMENT	Varies	Varies	Network initializing.	
LOAD mm nnn: ttttt EMPTY	OFF	Blink	Printing request is issued to an empty ttttt tray. Printing request is issued to Tray2 which is opened.. Printing request is issued to Tray1 which is opened when Tray2 is not exist. Load Mmmmmmmmm paper. TRAY1 (Tray 1) TRAY2 (Tray 2)	491 492
LOAD mmm AND PRESS ONLINE SWITCH nnn:MP TRAY EMPTY	OFF	Blink	Paper feed from MPTRAY is attempted, but the tray is empty. Loading mmm paper and pressing the On-line switch will start printing. MP TRAY (MP Tray)	490
INSTALL PAPER CASSETTE nnn:TRAY1 OPEN	OFF	Blink	Tray1 cassette that is a paper path for the paper loaded from Tray2 to be printed to is removed.	440
INSTALL PAPER CASSETTE nnn:TRAY1 MISSING	OFF	Blink	Tray1 cassette of paper to which printing is intended is removed, and paper cannot be fed.(When Tray2 exists)	430
ADD MORE MEMORY nnn: MEMORY OVERFLOW	OFF	Blink	Memory capacity overflows. Press ON-LINE switch so that printing continues. Install expansion RAM or decrease data size.	420

Table 5-1-1 Operator Alarm (2/5)

Display on Operator Panel	Ready LED	Attention LED	Description	Code nnn
REPLACE TONER nnn: * WASTE TONER FULL	OFF	Blink	* waste toner will fill up the box. Toner replacement is necessary. Y M C	414 415 416
HAVE YOU REPLACED * TONER? Y=ENTER/N=CANCEL	OFF	Blink	Displayed to confirm whether the user has replaced the * toner after Cover Open/Close. (This is because in case of Waster Toner Full, toner replacement cannot be automatically recognized.). The press of ENTER will reset the toner counter while clearing WASTE TONER FULL error. The press of CANCEL will bring the printer to waste toner full warning status. Y M C	
REPLACE TONER nnn: * TONER EMPTY	OFF	Blink	***** toner empty Y M C K Warning status takes effect at Cover Open/Close, while allowing printing approx 50 pages (T.B.D). (A4, density 5%).	410 411 412 413
CHECK TONER CARTRIDGE nnn: * TONER SENSOR ERROR	OFF	Blink	Something is wrong with Toner Sensor. If the Engine setting is Factory mode, error display appears as mentioned later. (This warning has appeared since PU/ FW 00.83) Y M C K	540 541 542 543
OPEN FRONT COVER nnn: PAPER SIZE ERROR	OFF	Blink	Inappropriate size paper was fed from a tray. Check the paper in the trays or check for Multiple-feed. Open and close the cover to perform recovery printing, and continue.	400
CHECK MP TRAY nnn: PAPER JAM	OFF	Blink	JAM has occurred. MP TRAY1	390
OPEN FRONT COVER nnn: PAPER JAM	OFF	Blink	JAM has occurred. TRAY1 TRAY2 FEED DUPLEX	391 392 380 372
OPEN TOP COVER nnn: PAPER JAM	OFF	Blink	JAM has occurred in paper path. Transport Exit Duplex Entry Printing Page Lost	381 382 383 389

Table 5-1-1 Operator Alarm (3/5)

Display on Operator Panel	Ready LED	Attention LED	Description	Code nnn
OPEN DUPLEX COVER nnn: PAPER JAM	OFF	Blink	JAM has occurred nearby DUPLEX unit. Duplex Reversal Duplex Input Multifeed in Duplex Unit.	370 371 373
INSTALL DUPLEX UNIT nnn: DUPLEX UNIT OPEN	OFF	Blink	Displayed if jam is occurring in Duplex Unit and the Duplex unit is removed. If a user removes the Duplex Unit when jam is not occurring in the Duplex unit, Service Call Error 181 occurs.	360
REPLACE IMAGE DRUM nnn: * DRUM LIFE	OFF	Blink	Drum life. Warning status takes effect at cover open/close. When the printer printed 500 pages (value of PU/FW 00.80. PU/FW 00.79± 20 pages), the error occurs again. Y M C K	350 351 352 353
REPLACE FUSER nnn: FUSER LIFE	OFF	Blink	Fuser life. Warning status occurs at cover open/close. When the printer printed 500 pages, the error occurs again.	354
REPLACE BELT nnn: BELT LIFE	OFF	Blink	Belt life. Warning status takes effect at cover open/close. When the printer printed 500 pages (value of PU/FW 00.80. PU/FW 00.79± 20 pages), the error occurs again.	355
REPLACE BELT nnn: BELT LIF	OFF	Blink	Water toner full. Warning status takes effect at cover open/close. When the printer printed 500 pages, the error occurs again.	356
CHECK IMAGE DRUM nnn: * DRUM MISSING	OFF	Blink	Drum is not correctly installed. Y M C	340 341 342
CHECK IMAGE DRUM & BELT LOCK nnn: K DRUM MISSING	OFF	Blink	Belt is unlocked or black drum is not correctly installed. K	343
CHECK BELT nnn: BELT MISSING	OFF	Blink	Belt unit is not correctly installed.	330
CHECK FUSER nnn: FUSER MISSING	OFF	Blink	Fuser unit is not correctly installed.	320
CLOSE COVER nnn:COVER OPEN	OFF	Blink	Cover is open. TOP (Top Cover) FRONT (Front Cover) (When either the upper or front cover is open, 310 and 311 appear in toggle because the sensor cannot identify which cover is open.)	310 311
CLOSE COVER nnn: DUPLEX COVER OPEN	OFF	Blink	Cover is open. DUPLEX	316

Table 5-1-1 Operator Alarm (4/5)

Display on Operator Panel	Ready LED	Attention LED	Description	Code nnn
DOWNLOAD MODE DATA RECEIVE	OFF	ON	Download mode when download data is received in normal operation. Show download data is receiving.	
DOWNLOAD MODE DATA RECEIVED OK			Receiving download data has finished.	
DOWNLOAD MODE REC DATA ERROR *			An error occurs when receiving download data. 1 FSize error 2 Checksum error 3 Print model No. error 4 Module I/F version error 5 FAT Version error	
DOWNLOAD MODE DATA WRITING			Download data is writing.	
DOWNLOAD MODE DATA WRITTEN OK			Writing download data has finished.	
DOWNLOAD MODE DATA WRITE ERROR			An error occurs when writing download data. 1 Memory alloc error 2 Download File error 3 Device free-space reserving error 4 Device free-space insufficient error 5 File Write error 6 CU-F/W Mismatch error	
POWER OFF/ON nnn: NETWORK ERROR	OFF	Blink	A network error is occurring.	300
REBOOTING d	OFF	ON	Rebooting. d: Decimal value (1 digit). Shows a cause of the rebooting. d = 0 Not listed below = 1 PJL command = 2 Changing the menu = 3 QUIT operator in PostScript language = 4 Changing the NIC setting (including from Web Page)	
POWER OFF/ON AND WAIT FOR A WHILE nnn:CONDENSING ERROR	OFF	Blink	(See the list of Service Calls.)	Fatal
POWER OFF/ON nnn: FATAL ERROR	OFF	Blink	(See the list of Service Calls.)	Fatal
SERVICE CALL nnn: FATAL ERROR	OFF	Blink	(See the list of Service Calls.)	Fatal
DOWNLOAD MODE	ON	OFF	Download Mode after the printer was powered on with pressing the Online switch. The mode that the printer to ready to receive download data.	
DOWNLOAD MODE DATA RECEIVE	Blink	OFF	Receiving download data.	

Table 5-1-1 Operator Alarm (5/5)

Display on Operator Panel	Ready LED	Attention LED	Description	Code nnn
DOWNLOAD MODE DATA RECEIVED OK	ON	OFF	Finished receiving download data.	
DOWNLOAD MODE REC DATA ERROR <No.***>	ON	ON	An error occurs when receiving download data 001 Size error 002 ChechSUM error 003 Printer model No. error 004 Module I/F version error 005 FAT Version error	
DOWNLOAD MODE DATA WRITING	Blink	OFF	Writing download data.	
DOWNLOAD MODE DATA WRITTEN OK	ON	OFF	Finished writing download data.	
DOWNLOAD MODE DATA WRITE ERROR <No.***>	ON	ON	An error occurs when writing download data 011 Memory alloc error 012 Download File error 013 Device free-space reserving error 014 Device free-space insufficient error 015 File Write error 016 CU-F/W Mismatch error	
INITIALIZING	OFF	OFF	The controller side is initializing.	
RAM CHECK\ *****	OFF	OFF	RAM checking. * appears after every 1/16 of the total amount has been checked.	

Table 5-1-2 Service Call Error (1/5)

Message	Cause	Error Description		Solution
Service call 001:Error(C5300 only)	Machine Check Exception Hardware fault detected. (Board defectiveness or Shortage of power supply volume)			Replace OWL/SPA board.
Power off/on 002:Error ~ 006:Error 007:Error(C5300 only)	CPU Exception	Does error display reappear?	Yes	Power OFF/ON Replace ARC/OWL/ SPA board.
service 020:Error	CU ROM Hash Check Error	Does error display reappear? (the case of a device which program ROM is attached to board directly.)	Yes	Power OFF/ON Replace ARC/OWL/ SPA board.
Service call 020:Error(C5300 only)	CU Program ROM Hash Check Error	Is program ROM DIMM set properly? Is error recovered by replacing program ROM DIMM? (the case of a device which program ROM is set to DIMM Slot.)	No Yes No	Reset ROM DIMM Replace program ROM DIMM. Replace OWL/SPA board.
Service call 023:Error(C5300 only)	CU Font ROM Hash Check Error	Does error display reappear?	Yes	Power OFF/ON Replace OWL/SPA board.
Service call 030:Error	CU RAM Check Error	Does error display reappear?	Yes	Power OFF/ON Replace ARC/OWL/ SPA board.
Service call 031:Error	CU Optional RAM Check Error	Is RAM DIMM set properly? Is error recovered by replacing RAM DIMM?	No Yes No	Reset RAM DIMM. Replace RAM DIMM. Replace ARC/OWL/ SPA board.
Service call 035:Error(C5300 only)	CU Optional RAM Spec Error CU RAM DIMM is not adjust to the specification.	Is RAM DIMM genuin? Is RAM DIMM set properly? Is error recovered by replacing RAM DIMM?	No No Yes No	Use genuine RAM DIMM. Reset RAM DIMM. Replace RAM DIMM. Replace OWL/SPA board.
Service call 040:Error	CU EEPROM Error	Does error display reappear?	Yes	Power OFF/ON Replace ARC/OWL/ SPA board.
Service call 041:Error	CU Flash Error Flash ROM Error on the CU board.	Does error display reappear?	Yes	Power OFF/ON Replace ARC/OWL/ SPA board.

Table 5-1-2 Service Call Error (2/5)

Message	Cause	Error Description		Solution
Service call 042:Error ~ 044:Error	Flash File System Error	Failed access to Flash set directly on CU board.		Run forced initialization of Flash.(Note that NIC- F/W and Mac address is deleted. After the initialization, it is need to download NIC-F/W and/or Mac address by Maintenance utility.) In the case of before CU-F/W G1.26/X1.26, Press “+”, “-”, “CAN- CEL” to turn power ON. And after CU-F/W G1.27/X1.27, execute FLASH FORMAT of MAINTENANCE MENU of SYSTEM MAINTEN- ANCE MENU. Release buttons when [FLASH FORMAT] appears, wait until [ON- LINE] (2min) and Replace ARC/OWL/ SPA board if symptom does not change.
Service call 051:Error(C5300 only)	CU Fan Error Abnormal CPU cooling fan on CU board.	Is CU Fan connector set prop- erly? Is error recovered by replacing fan?	No Yes No	Connect properly. Replace fan. Replace OWL/SPA board.
Power off/on 070:Error(C5300 only)	PSE firmware fault detected.	Does error reoccur?	Yes	Power OFF/ON. Replace OWL/SPA board.
Power off/on 072:Error xx	Engine I/F Error I/F error between PU-CU.	Is CU assembly set properly? Is error recovered by replacing ARC/OWL board?	No Yes No	Set properly. Replace ARC/OWL/ SPA board. Replace PU board (RSN)
Power off/on 073:Error xxxxxxxx	Video Error Fault detected when image data is extended.	[C5100] Is CU assembly set properly?	No Yes	Set properly. Replace to high- performance PC or drop resolution of data and print again.
		Fault again?	Yes	Replace ARC board
		[C5300] Is CU assembly set properly?	No Yes	Set properly. Replace OWL/SPA board.
Power off/on 074:Error xxxxxxxx 075:Error xxxxxxxx	Video Error Fault detected when image data is extended.	Is CU assembly set properly?	No Yes	Set properly. Replace ARC/OWL/ SPA board.

Table 5-1-2 Service Call Error (3/5)

Message	Cause	Error Description		Solution
Service call 104:Error	Engine EEPROM setting check is OK when power ON. Then detect read/ write error.	Does error reoccur?	Yes	Power OFF/ON Replace PU board (RSN)
Service call 105:Error	Read/ write error in the setting check of engine EEPROM when power on.	Does error reoccur?	Yes	Power OFF/ON Replace PU board (RSN)
Service call 106:Error	Abnormal engine control logic.	Does error reoccur?	Yes	Power OFF/ON Replace PU board (RSN)
Service call 121:Error	High-voltage power supply I/F error.	Is cable between PU board and high-voltage power unit con- nected properly? Is there no improperly connec- tions?	No Yes No	Connect properly. Check improper connec- tions for high-voltage. Replace high-voltage power supply?
Service call 122:Error	Low-voltage power supply fan error. Low-voltage power supply temperature error.	Is fan in low-voltage power supply unit operating? Is fan connector connected properly?	No Yes No Yes	Check connections for connector of fan. Replace low-voltage power supply. Replace fan motor. Replace low-voltage power supply.
Service call 123:Error	Abnormal envi- ronment humidity / Not connected humidity sensor.	Does error reoccur?	Yes	Power OFF/ON Replace humidity sensor
Service call 124:Error	Abnormal envi- ronment tempera- ture.	Does error reoccur?	Yes	Power OFF/ON Replace humidity sensor
Service call 127:Error	Error detected at the fuser unit cooling fan.	Is fan connector connected properly? Does error reoccur?	No Yes No	Connect properly again. Replace fan motor Replace PU board (RSN)
Service call 131:Error ~ 134:Error	LED head fault detected. (131 = Y, 132 = M, 133 = C, 134 = K)	Is LED head properly set? Does error reoccur?	No Yes Yes	Set properly for LED head unit. Turn power ON again. Replace LED head unit
Service call 142:Error	Error detented at ID position of Up/ Down	Is ID unit set properly? Does error reoccur?	Yes No Yes	Reset ID unit. Turn power ON again. Replace ID Up/Down sensor.
Service call 150:Error ~ 153:Error	ID unit fuse cannot be discon- nected. (150 = Y, 151 = M, 152 = C, 153 = K)	Is ID unit setting proper? Does error reoccur? Is error recovered by replacing PRD board?	No Yes Yes No	Reset ID unit. Turn power ON again. After check connec- tions of cable between PRD board and PU board, replace PRD board. Replace PU board (RSN)

Table 5-1-2 Service Call Error (4/5)

Message	Cause	Error Description		Solution
Service call 154:Error	Belt unit fuse cannot be disconnected.	Is belt unit setting proper? Does error reoccur?	No Yes Yes	Reset belt unit. Turn power ON again. Check cable connections and, replace PU board(RSN)
Service call 155:Error	Fuser unit fuse cannot be disconnected.	Is fuser unit set properly? Does error reoccur?	No Yes Yes	After cleaning for fuser connector, reset. Turn power ON again. Check cable connections and replace PU board (RSN)
Service call 160:Error ~ 163:Error	Error detected by toner sensor. (160 = Y, 161 = M, 162 = C, 163 = K) It does not occur in factory default setting.	Is toner cartridge setting? Is toner lock lever setting? Does error reoccur?	No No Yes	Set toner cartridge. Turn a lock lever of toner to a fixed position. Replace toner sensor or assembly.
Service call 170:Error 171:Error	Short circuit in fuser thermistor or open detected.	Does error reoccur?	Yes	Turn power ON again. Replace fuser unit.
Service call 172:Error 173:Error	Abnormal temperature detected by fuser thermistor (high-temp or low temp.)	Does error reoccur?	Yes	Turn power ON again. Replace fuser unit.
Service call 181:Error 182:Error	Option unit I/F error. (181 = Duplex Unit, 182 = Option Tray)	Does error reoccur?	Yes	Turn power ON again. After checking connection parts of connector, replace option unit.
Power off/on 190:Error	System Memory Overflow.	Does error reoccur?	Yes	Turn power ON again. Add option RAM DIMM.
Service call 200:Error ~ 202:Error	PU Firmware download Error.	Error occurred while writing over the PU firmware.		Turn the printer OFF/ON, and retry to download the PU firmware again. (Usually, the procedure (PU firmware download) which isn't done, so this is not occur.)
Power off/on 209:Download Error	Media Table download Error.	Downloading Media Table to PU has failure.(Related to Custom Media Type)		Turn the printer OFF/ON, and retry to download the PU firmware, again. (Usually, the procedure isn't done, so this is not occur.)

Table 5-1-2 Service Call Error (5/5)

Message	Cause	Error Description		Solution
Power off/on 203:Error 204:Error 207:Error 208:Error 210:Error ~ 214:Error F0C:Error F0D:Error(C5300 only) FFE:Error(C5300 only) FFF:Error	An error was detected of the CU program. (203~214 is not occur in usual operating.)	Reinstall the CU board. Is the error message displayed again?		After turn power OFF, check connections between CU board and PU board. Then turn power ON again.
Service call 220:Error	False setting of a record medium detected by a print statistics.	Take off the HDD or replaced?	Yes	Reset original HDD.
Power off/on 901:Error 902:Error	Short or open in belt thermistor detected.	Is belt thermistor cable setting proper? Does error reoccur?	No Yes Yes	Connect cable set properly again. Turn power ON again. Replace belt thermistor.
Power off/on 903:Error 904:Error	Abnormal temperature detected by belt thermistor (high-temp or low temp.)	Is belt thermistor cable setting proper? Does error reoccur?	No Yes Yes	Connect cable set properly again. Turn power ON again. Replace belt thermistor and leave aside for 30 min. Then turn power ON again.
Communication Error	CU PWB is not operating correctly.	[C5100] Is CU assembly set properly? Fault again?	No Yes Yes	Set properly. Replace ARC board. Replace ARC board.
		[C5300] Is program ROM DIMM set properly? Is error recovered by replacing program ROM DIMM?	No Yes No	Reset ROM DIMM. Replace ROM DIMM. Replace OWL/SPA board.

5.5.2 Preparing for troubleshooting

(1) Operator panel display

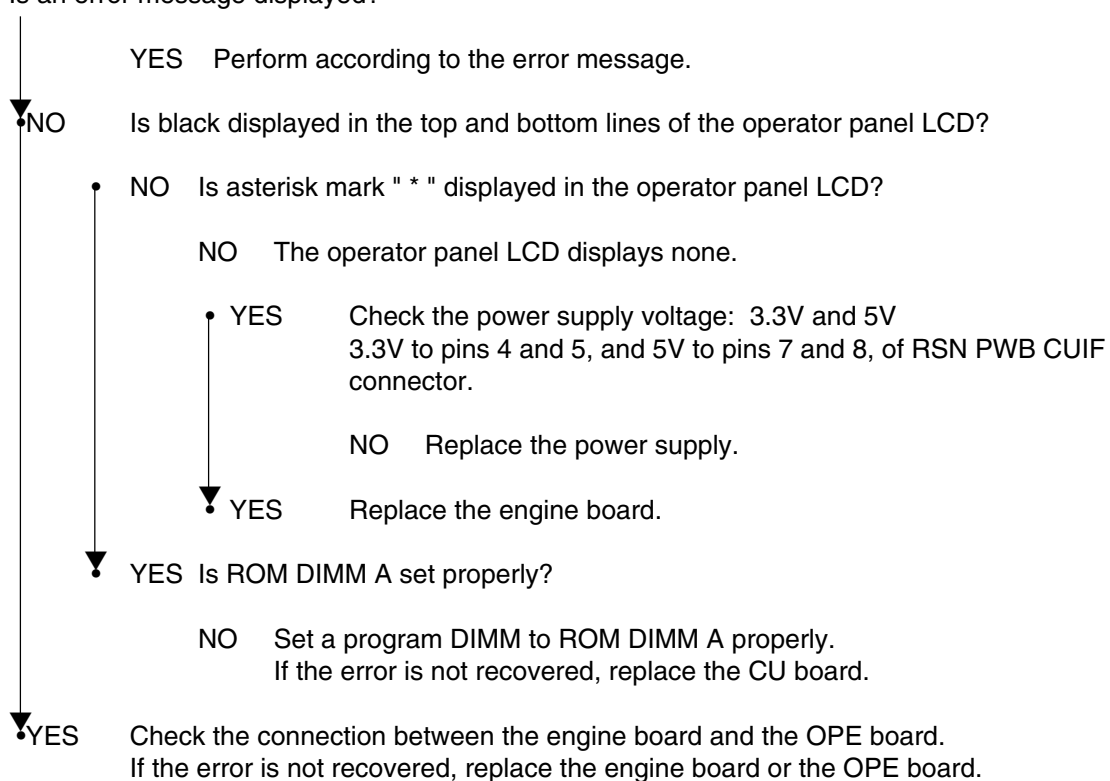
Problems that are generated in this device are indicated in the LCD.

Apply proper measures according to the message displayed in the LCD.

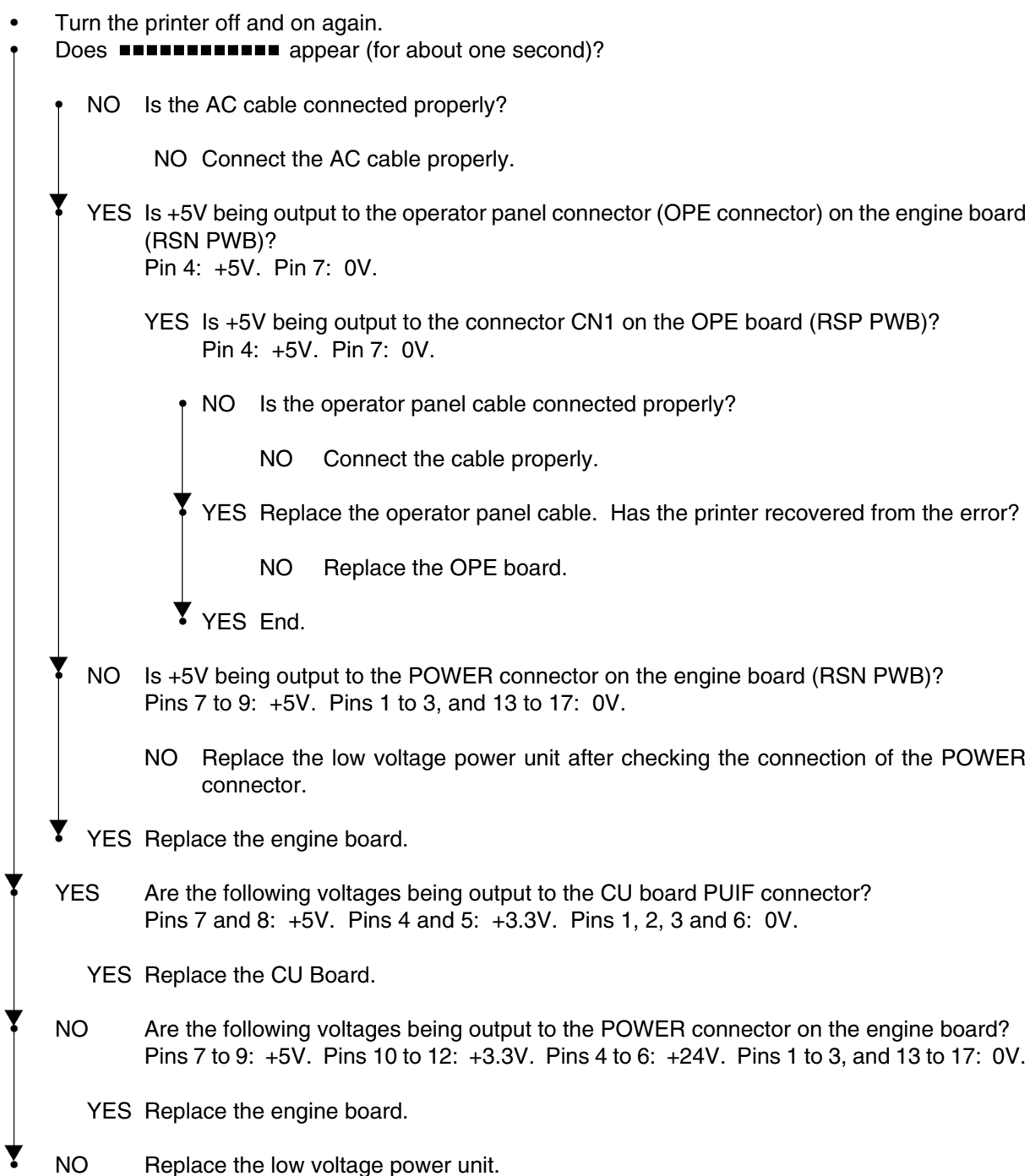
No.	Problem	Flow Chart No.
1	Printer Malfunction after Turn-on.	①
2	Jam Errors Paper Loading Jam (1st tray) Paper Loading Jam (Multipurpose tray) Paper Feed Jam Paper Exit Jam Duplex Print Jam	②-1 ②-2 ②-3 ②-4 ②-5
3	Paper Size Error	③
4	Image Drum Up/Down Operation Error	④
5	Fuser Unit Error	⑤
6	Motor Fan Error	⑥

Note: When replacing engine boards (RSN PWBs), read in the EEPROM chip data from the boards and copy it onto installed new boards.

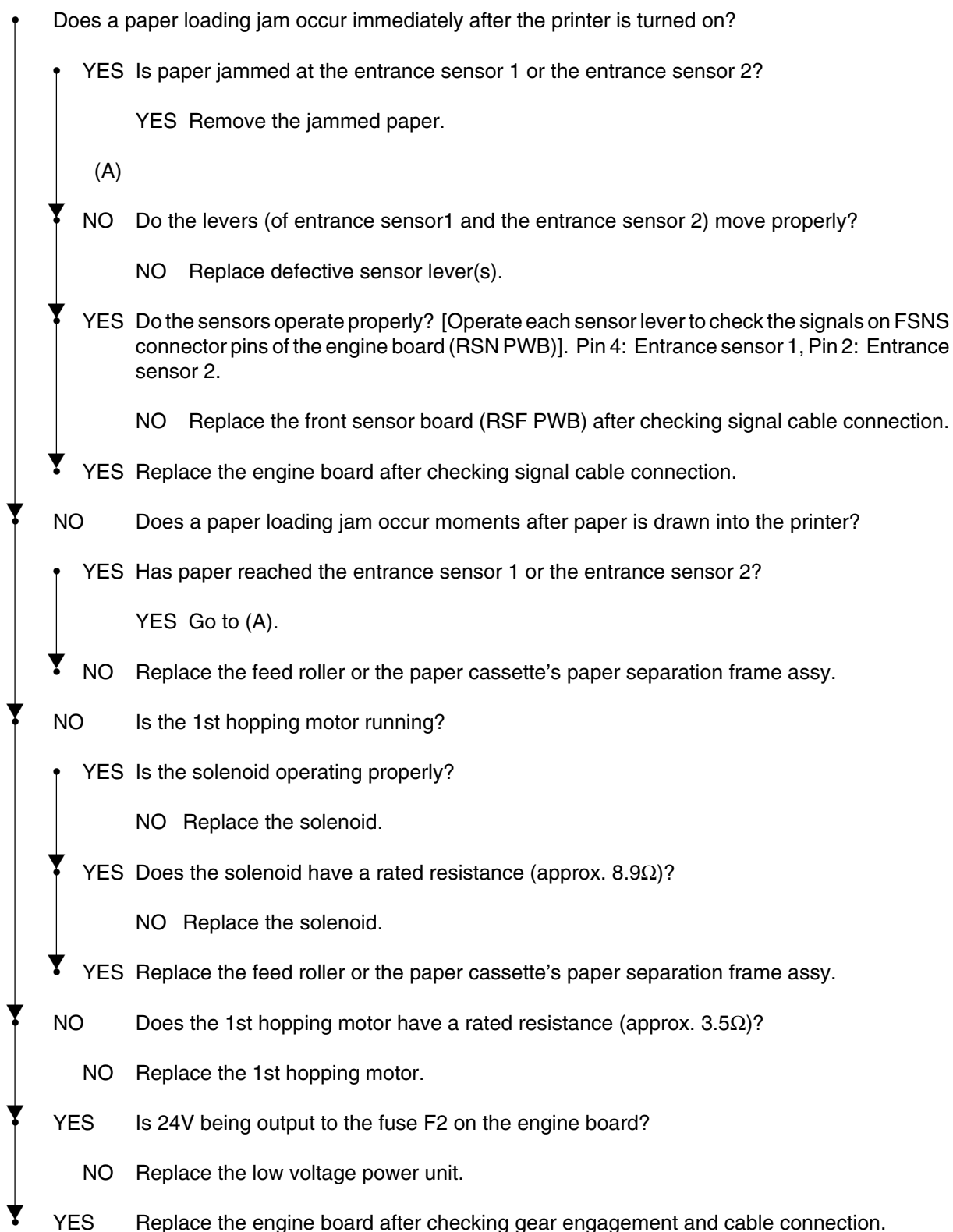
Is an error message displayed?



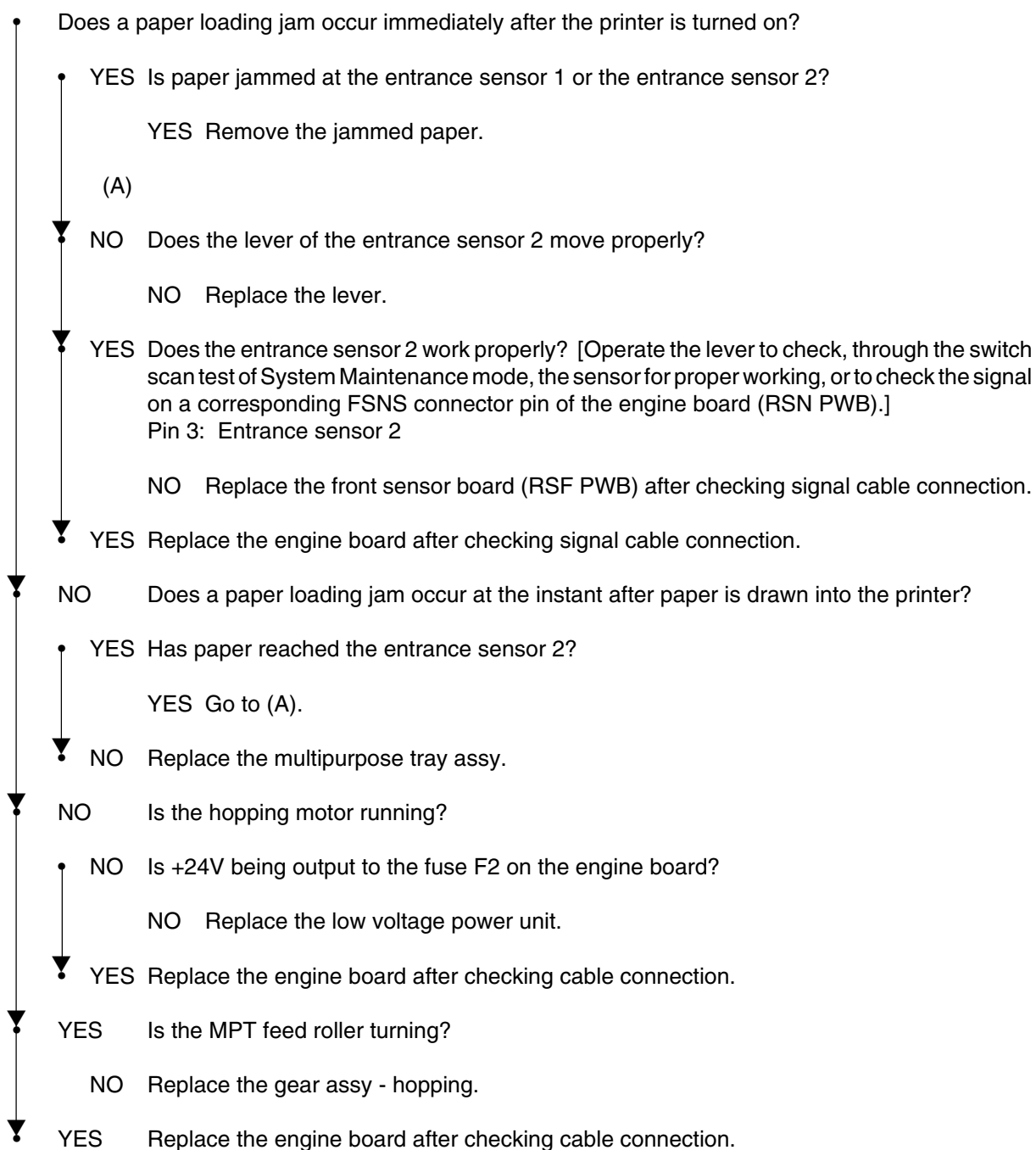
① The printer does not operate properly after it is turned on.



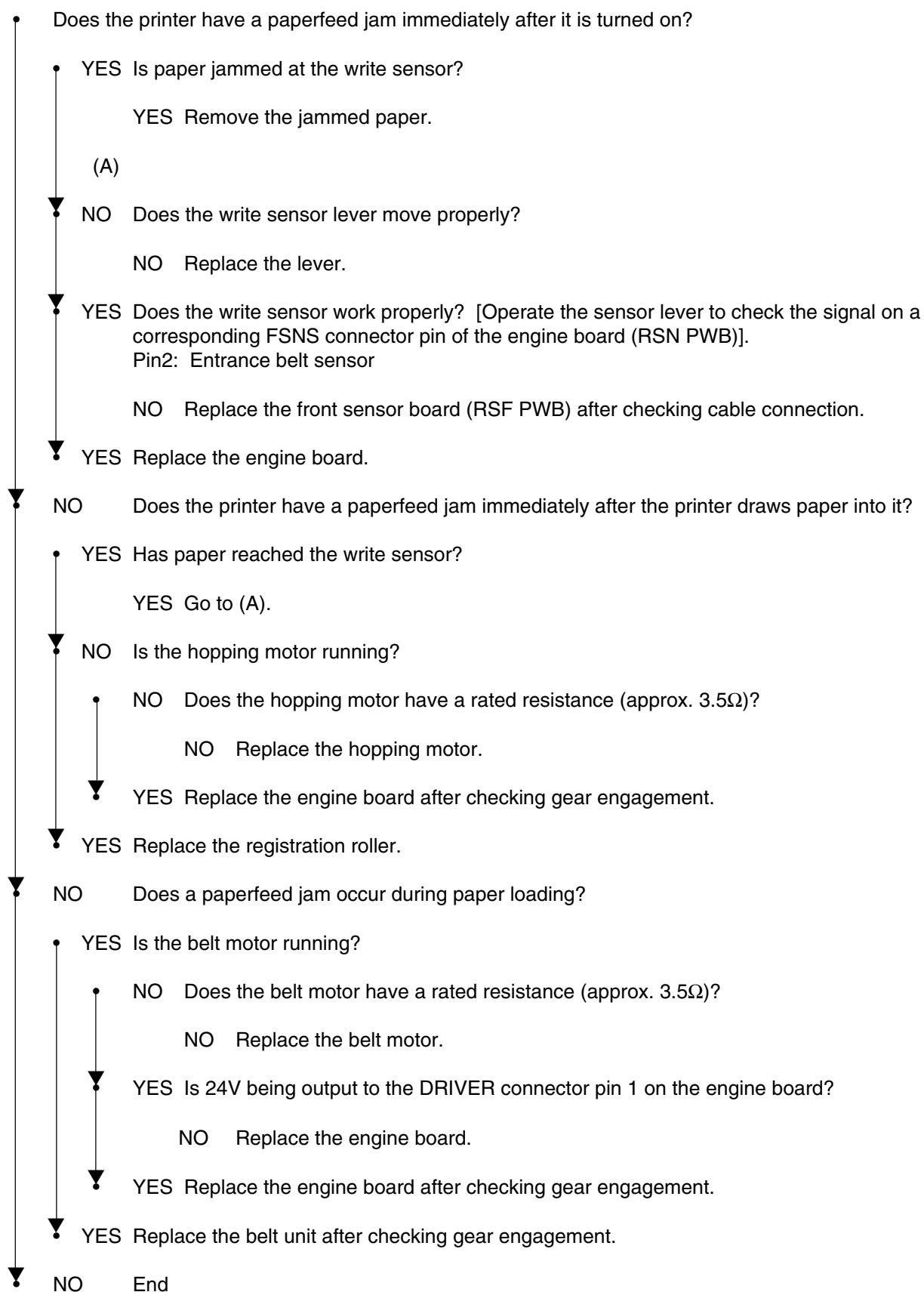
②-1 Paper Loading Jam (1st tray)



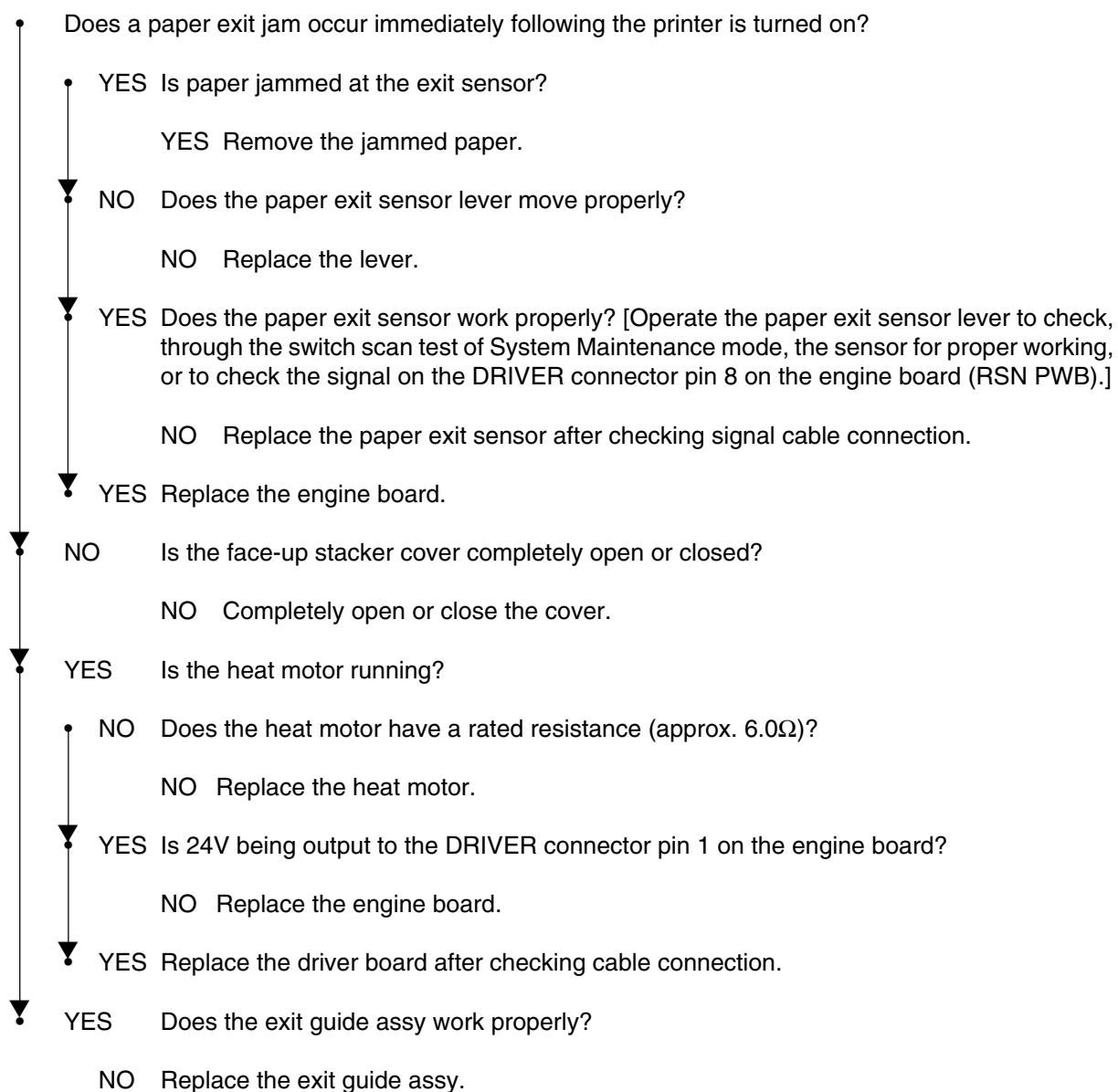
②-2 Paper Loading Jam (Multipurpose tray)



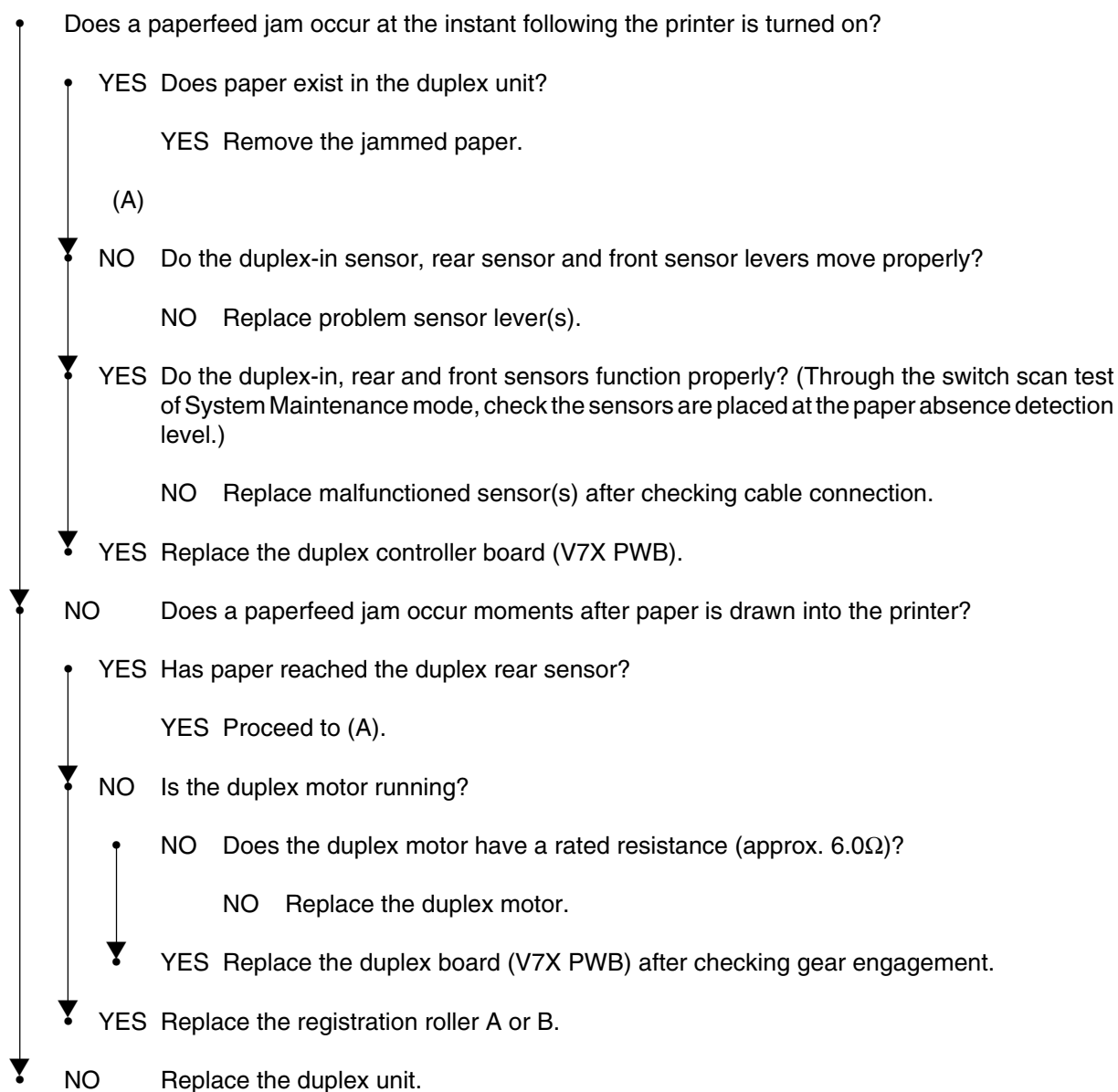
②-3 Paper Feed Jam



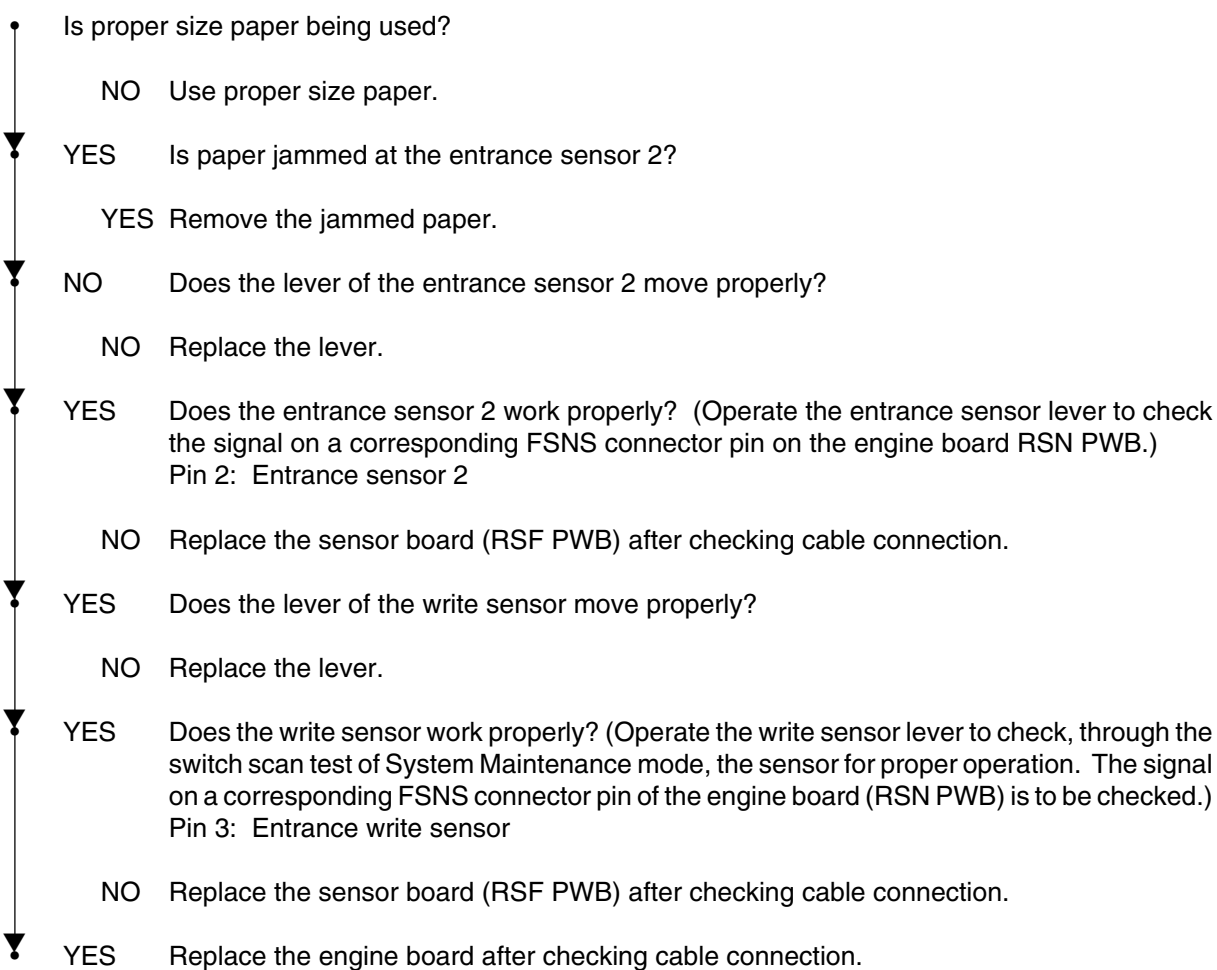
②-4 Paper Exit Jam



②-5 Duplex Print Jam



③ Paper Size Error



④ Image Drum Unit (ID) Up/Down Operation Error

- Power the printer off and, after a few seconds, on again.
- Are all the ID drums properly revolving during printing?
 - NO Does the ID motor (C) have a rated resistance (approx. 3.5Ω)?
 - NO Replace the ID motor(C).
 - ▼ YES Is 24V being output to the F1 of the engine board?
 - NO Replace the low voltage power unit.
 - ▼ YES Replace the engine board after checking cable connection.
- ▼ YES Is ID up-and-down operation being performed (is the operation performed by ID UP/DOWN on motor and clutch testing)?
 - NO Replace the gear assys - planet L and R.
- ▼ YES Does the ID up/down sensor work properly? (Check the signals on the high voltage power unit CN3, pin 2.)
 - Are: 5V with the sensor light unshielded; and
0V with sensor light shielded
being output?
 - NO Replace the high voltage power unit.
- ▼ YES Replace the engine board after checking the cable connection between the high voltage power unit and the engine board (RSN PWB)

⑤ Fuser Unit Error

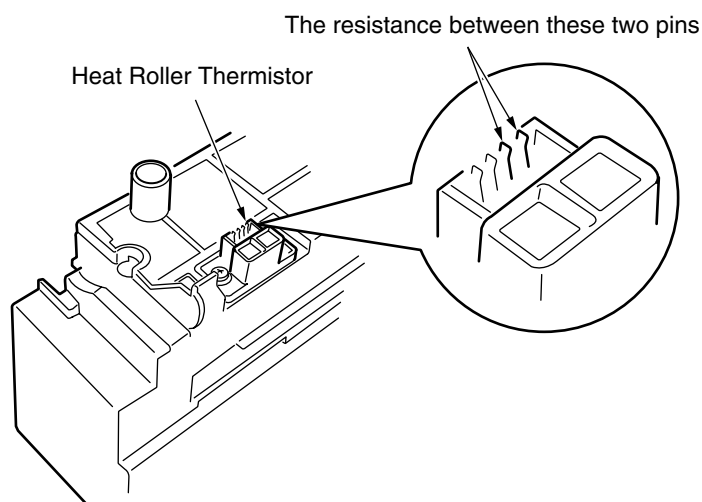
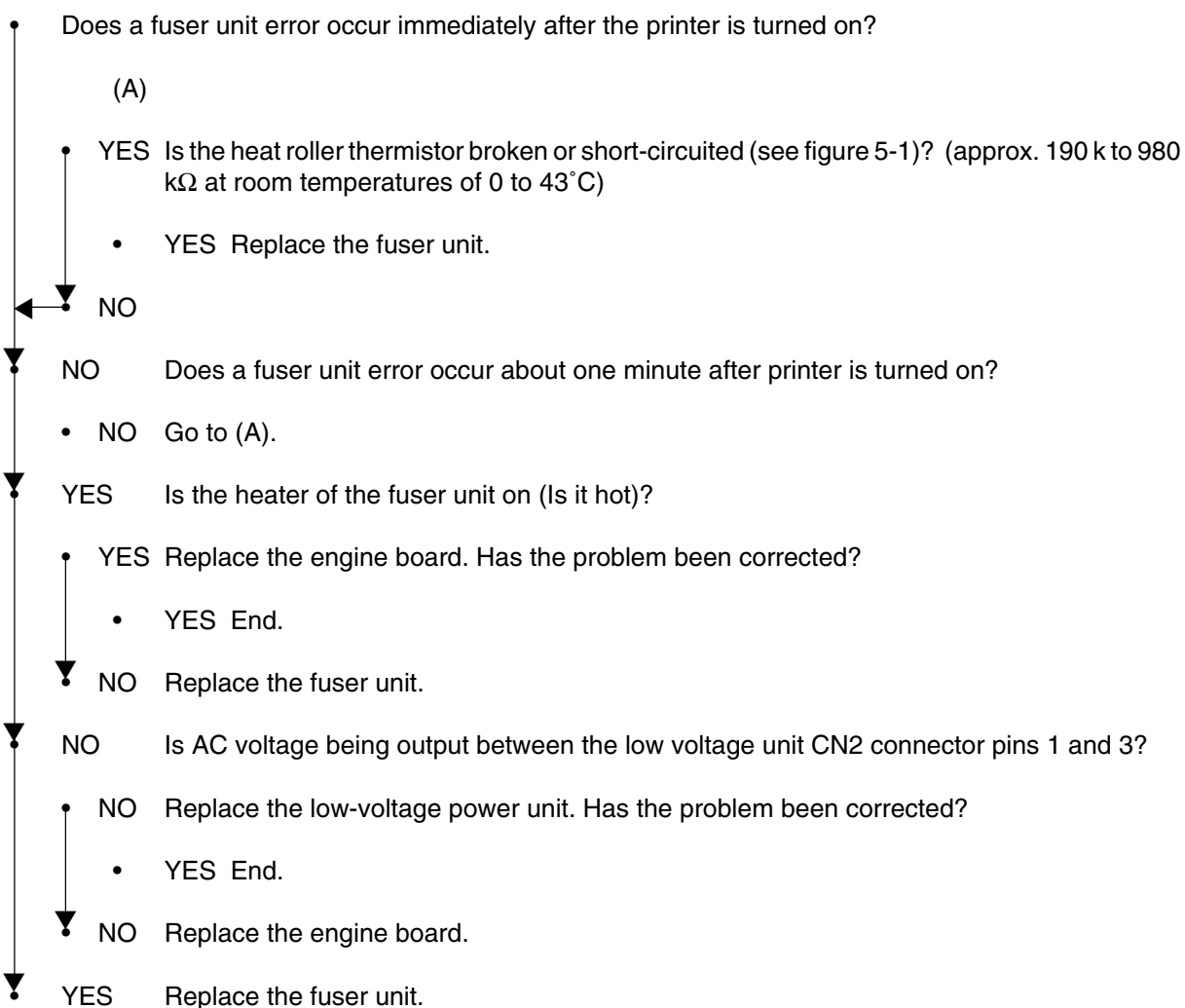
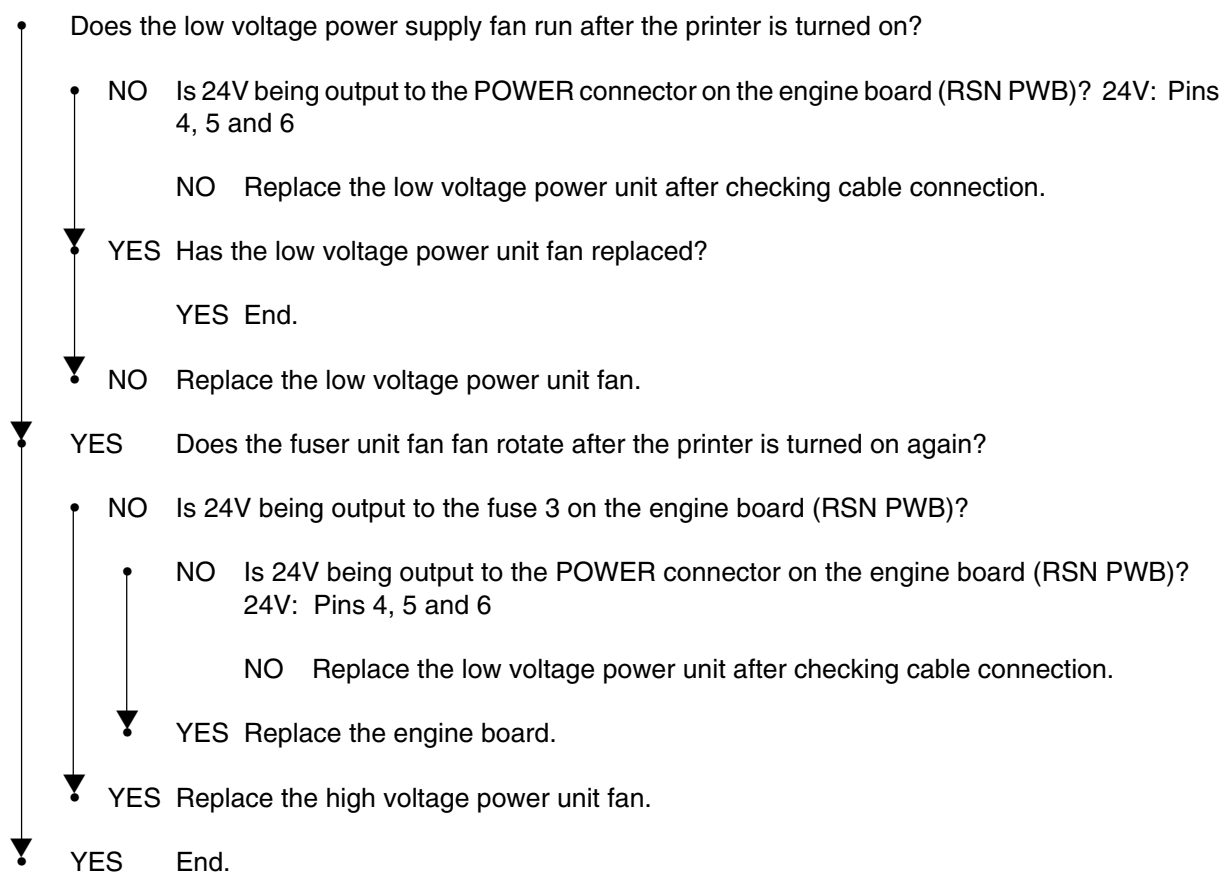


Figure 5.1

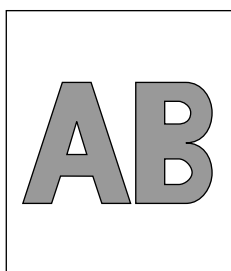
⑥ Motor Fan Error



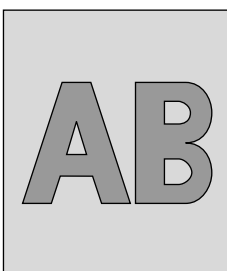
5.5.3 Image Problem Troubleshooting

When printout images are not satisfactory as illustrated below, follow the troubleshooting steps listed below.

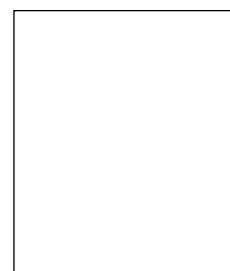
Abnormal Image	Flowchart No.
Light or faded image, or color misalignment, on whole page (Figure 5.2- A)	①
Dirty background (Figure 5.2- B)	②
Blank page (Figure 5.2- C)	③
Vertical belt or line (black or color) (Figure 5.2- D)	④
Vertical belt or line (white or uneven-color) (Figure 5.2- E)	⑤
Poor fusing (ink spreads or peels when touched with fingers.)	⑥
Defective image of regular interval (Figure 5.2- F)	⑦
Missing image	⑧
Color misalignment	⑨
Color different from original one	⑩



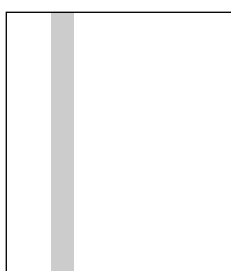
Ⓐ Light or faded image on whole page



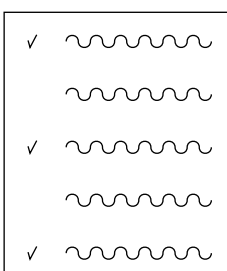
Ⓑ Dirty Background



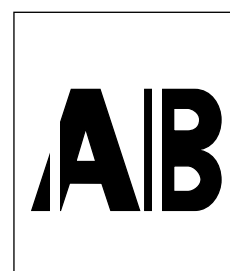
Ⓒ Blank



Ⓓ Vertical black belt or line



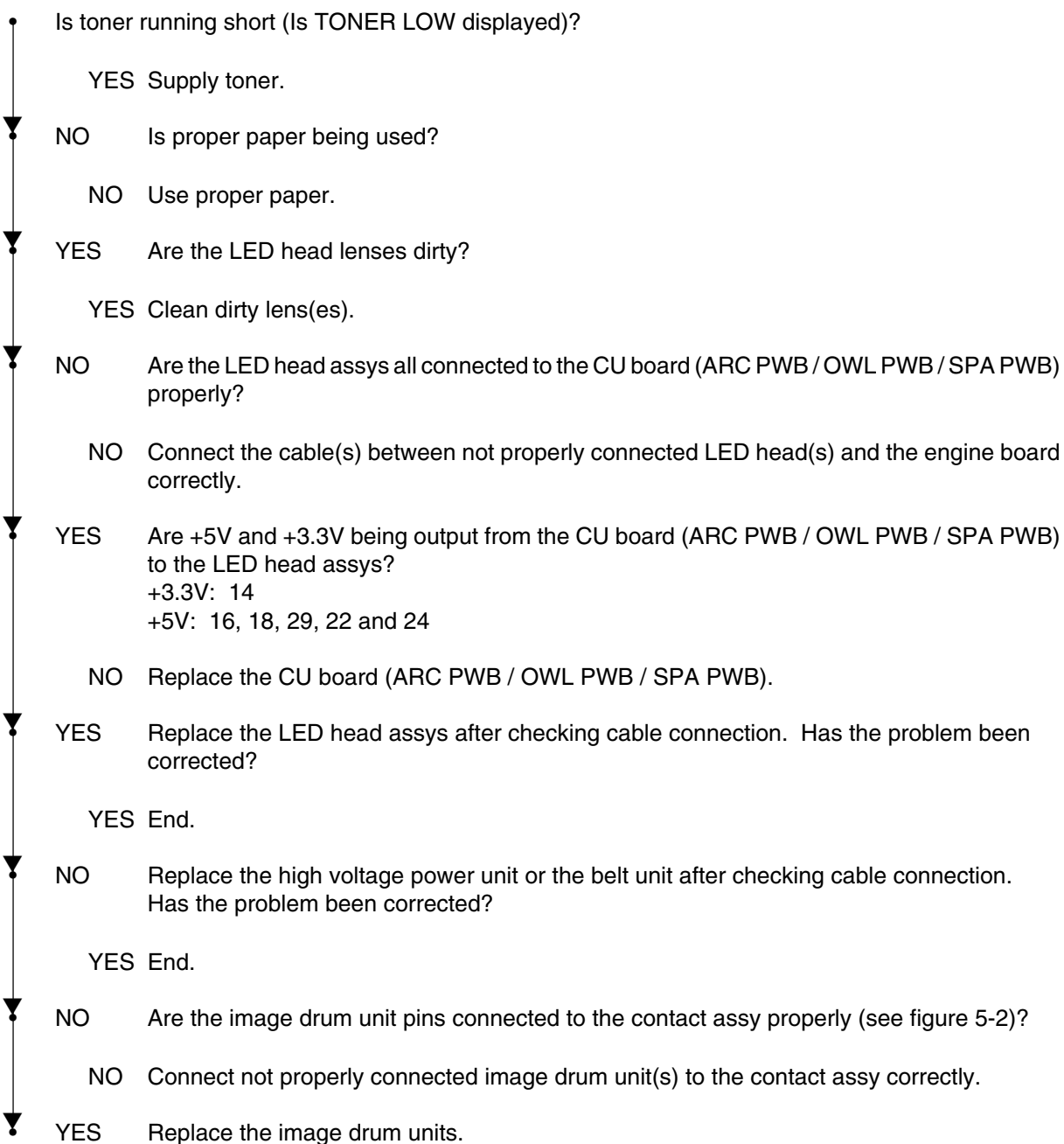
Ⓔ Defective image of regular interval



Ⓕ Vertical white belt or line

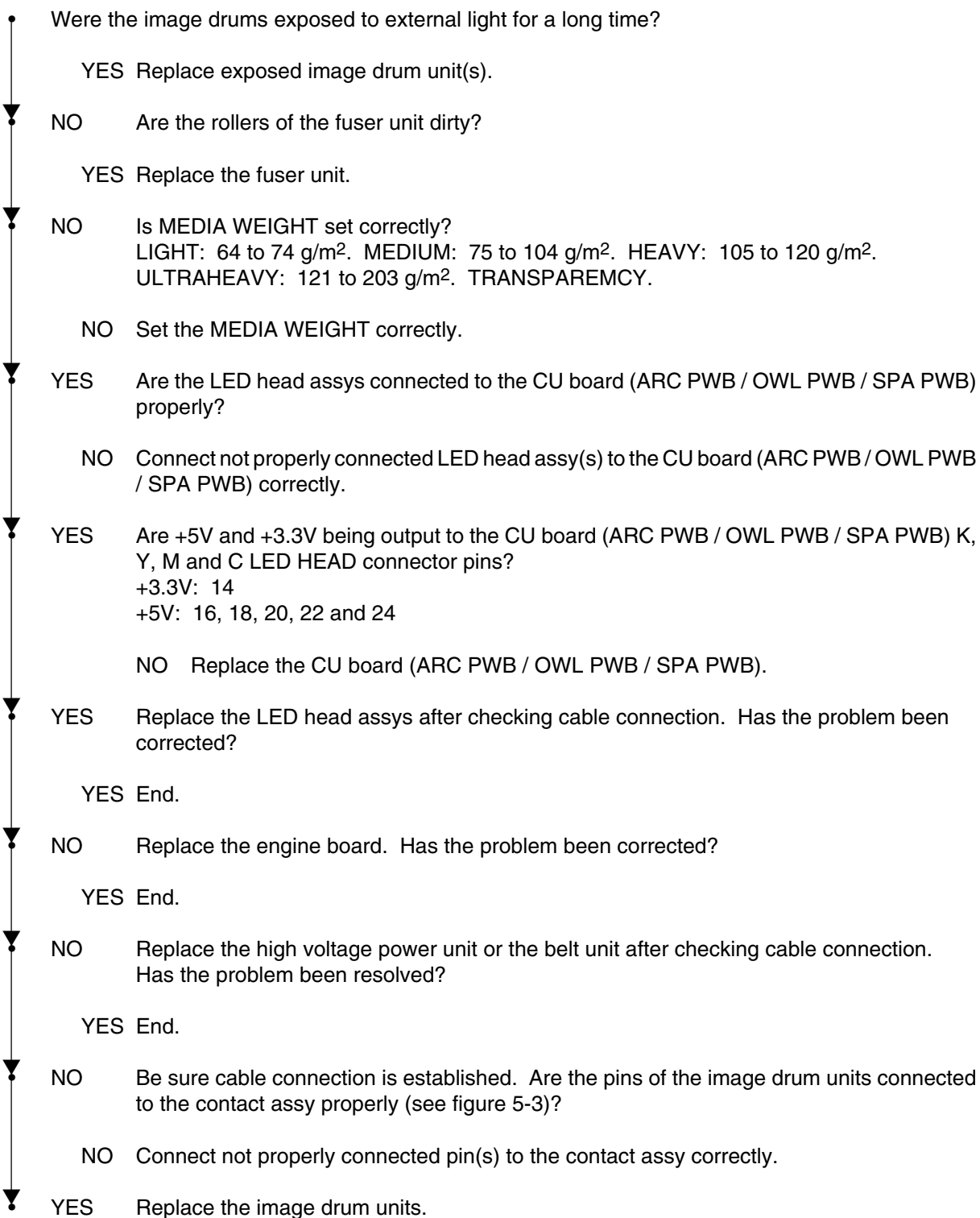
Figure 5.2

① Light or faded image, or color misalignment, on whole page (Fig 5-2 ①)



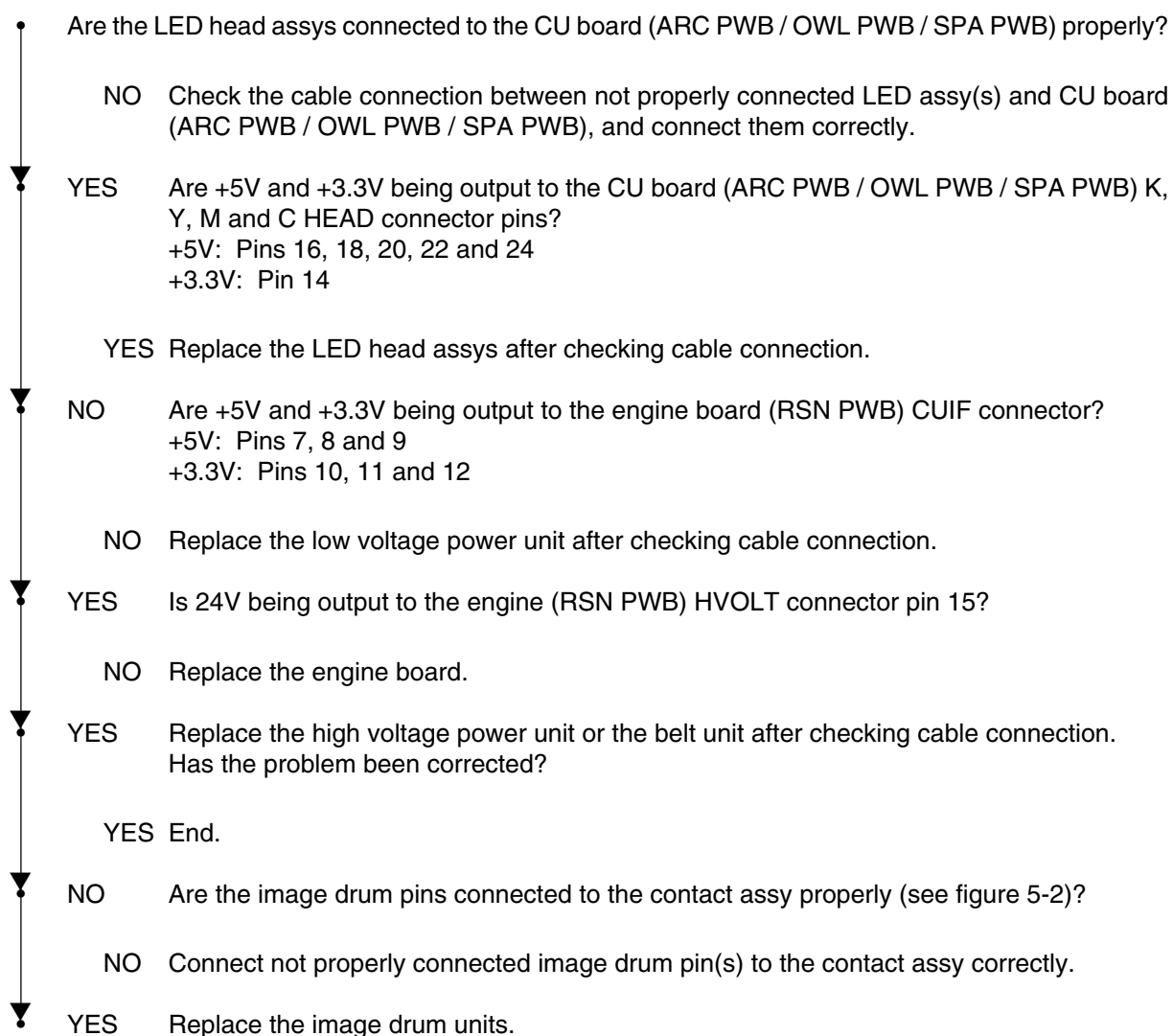
Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

② Dirty background (Fig. 5-2 ⑧)



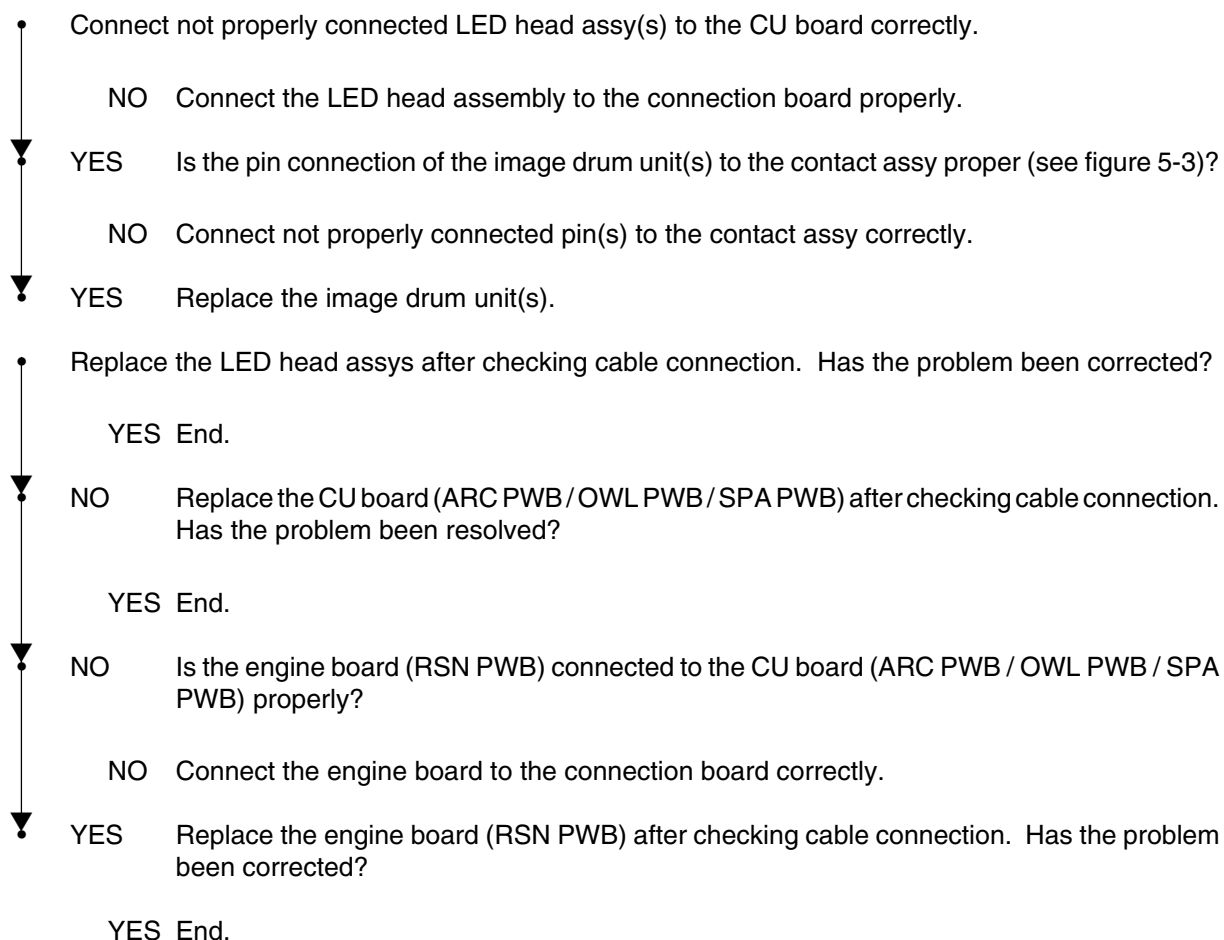
Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

③ Blank page (Fig 5-2 ©)



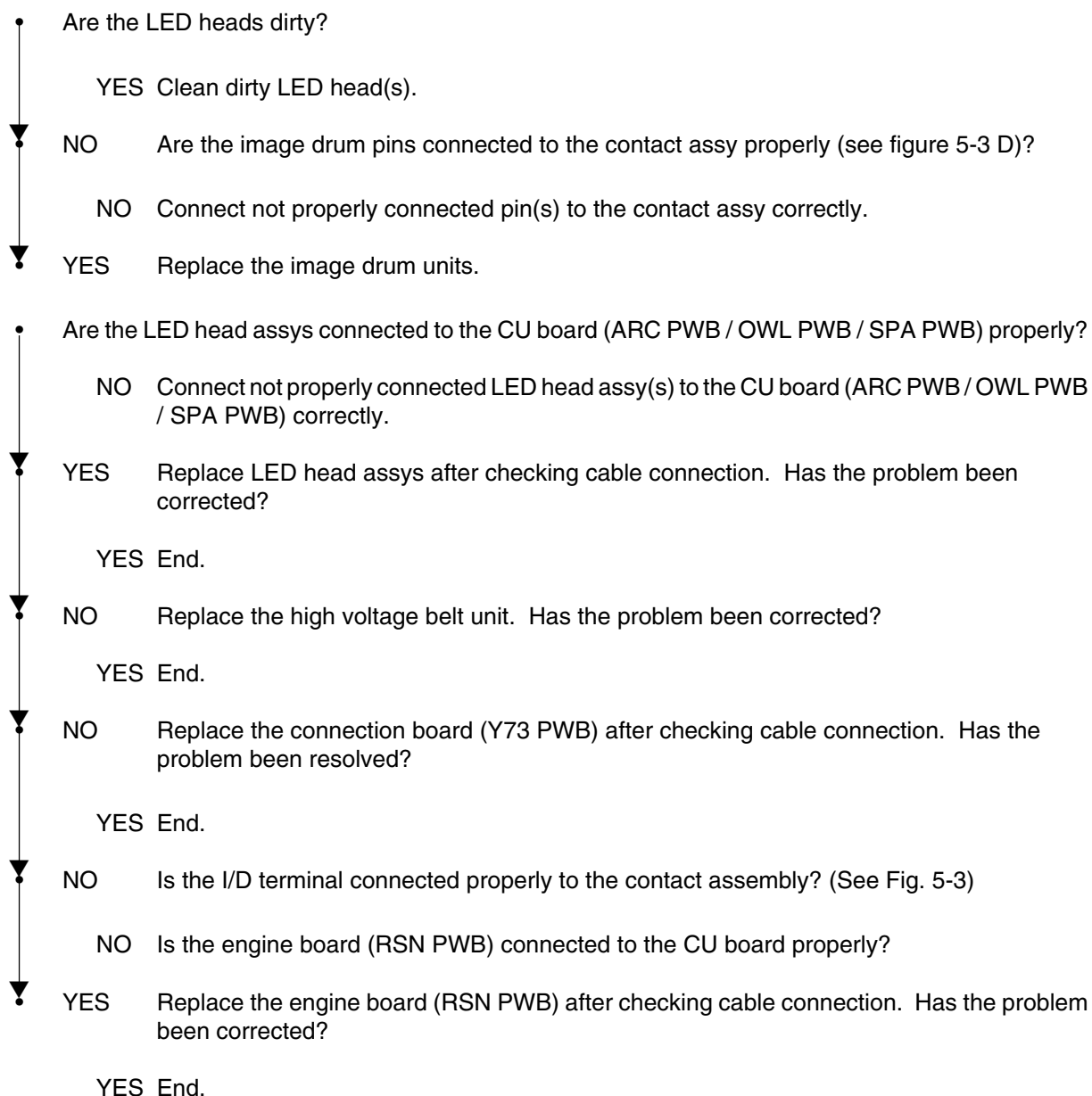
Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

④ Vertical belt or line (black or color) (Fig. 5-2 ㉔)



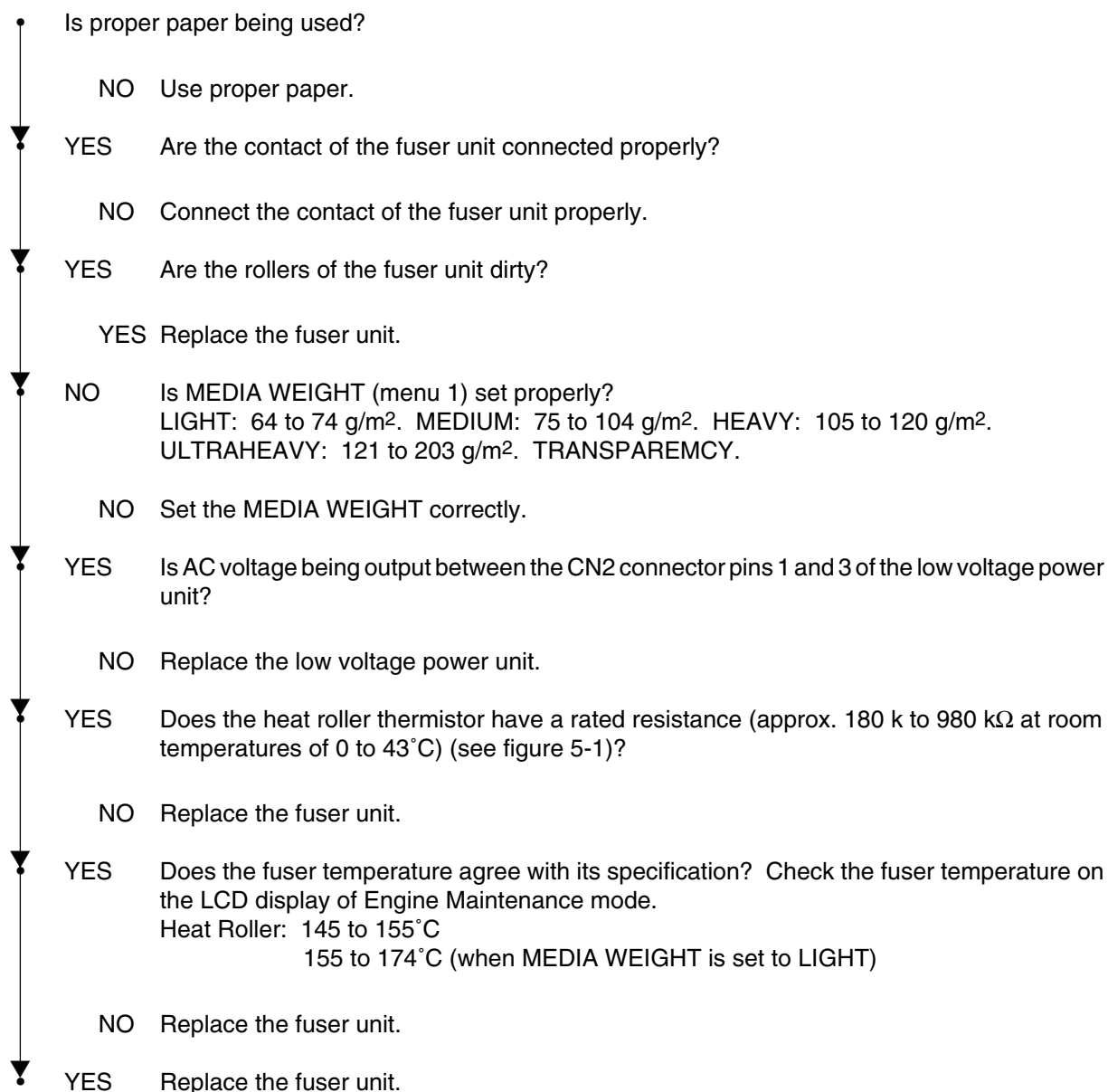
Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

⑤ Vertical belt or line (white or uneven-color) (Fig. 5-2 ㊦)



Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

⑥ Poor fusing (Ink spreads or peels when touched lightly with fingers.)



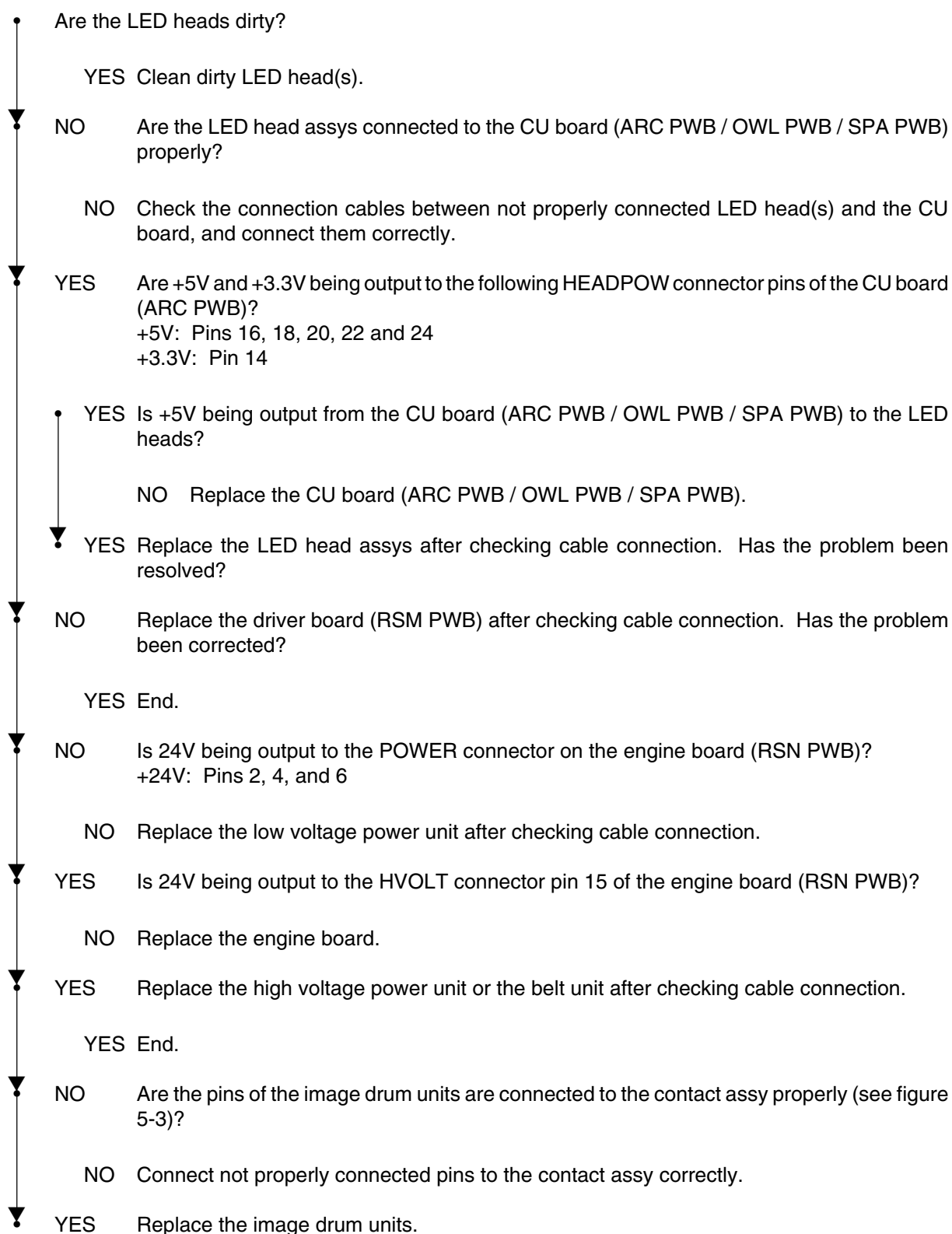
Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

⑦ Defective image of regular interval (Figure 5.2-⑤)

Interval	Problem	Troubleshooting
94.25 mm	Image Drum	Replace the image drum unit.
42.16 mm	Developing Roller	Replace the image drum unit.
62.01 mm	Toner Supply Roller	Replace the image drum unit.
37.7 mm	Charging Roller	Replace the image drum unit.
85.45 mm	Fuser Upper Roller	Replace the fuser unit.
87.96mm	Fuser Lower Roller	Replace the fuser unit.
50.27mm	Transfer Roller (K)	Replace the belt unit.
43.98mm	Transfer Roller (Color)	Replace the belt unit.

Note: The life counts of the image drum units, fuser unit and belt unit are automatically reset at their respective replacements.

⑧ Missing image



Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

⑨ Color misalignment

“TONER LOW” is showing on the display.

YES Supply toner. Has the problem been resolved?

YES End.

NO Conduct a color registration test of Engine Maintenance mode.
Procedure: Enter the self-diagnostic mode (level 1) of Engine maintenance mode.

DIAGNOSTIC MODE
XX.XX.XX

Pressing the MENU+ or MENU- key three times displays “REG ADJUST TEST.”

REG ADJUST TEST

Press the ENTER key once to show “REG ADJUST EXECUTE.”

REG ADJUST EXECUTE

Press the ENTER key to execute auto color registration adjustment (the motor starts running and color registration adjustment is performed).

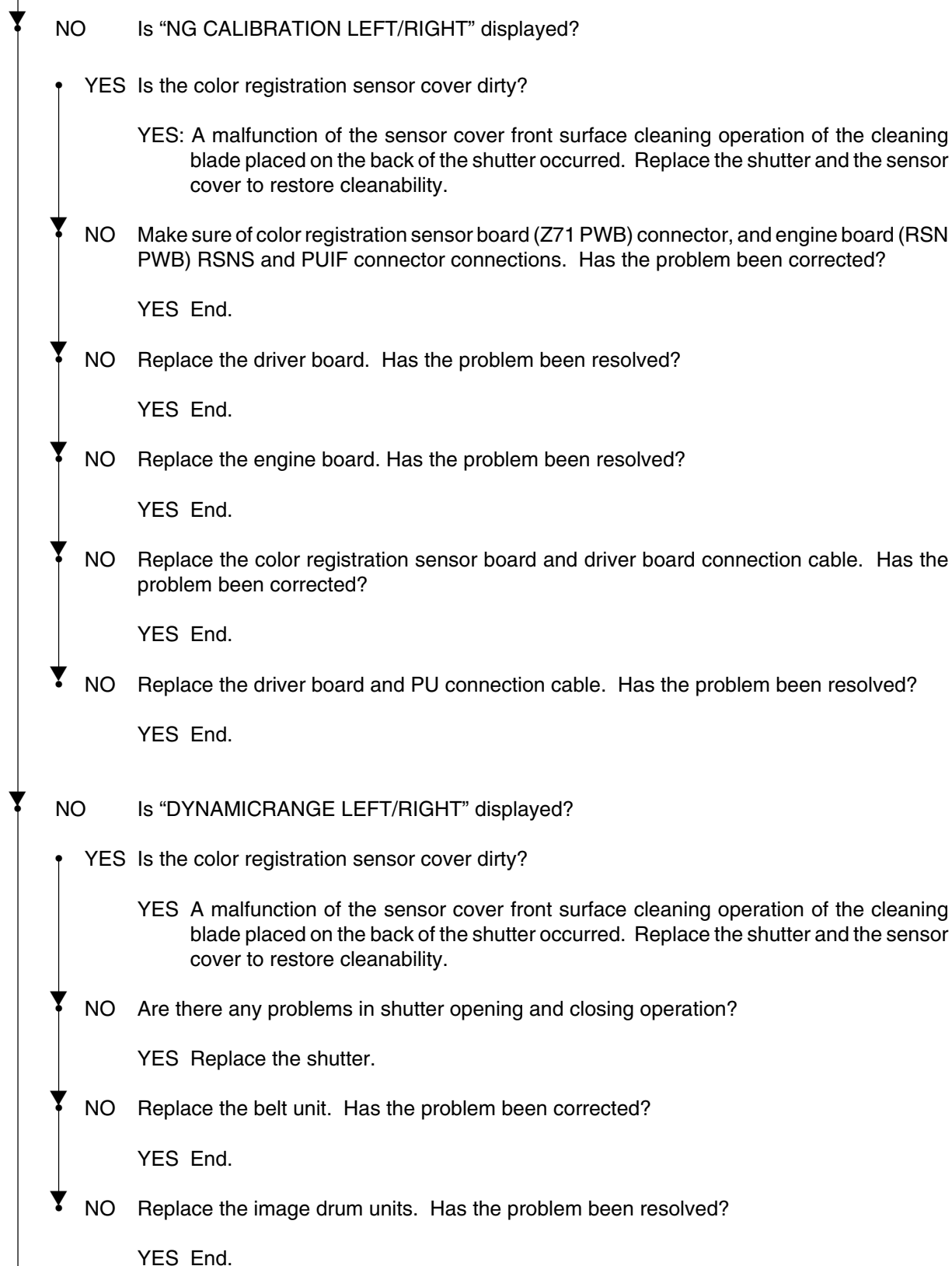
Has the symptom that the color registration adjustment operation is not performed (the motor does not run) and “OK” is immediately displayed occurred?

YES An other-than-color-misalignment error occurred. Correct the error. Has the color misalignment resolved?

YES End.

(A)

(A)



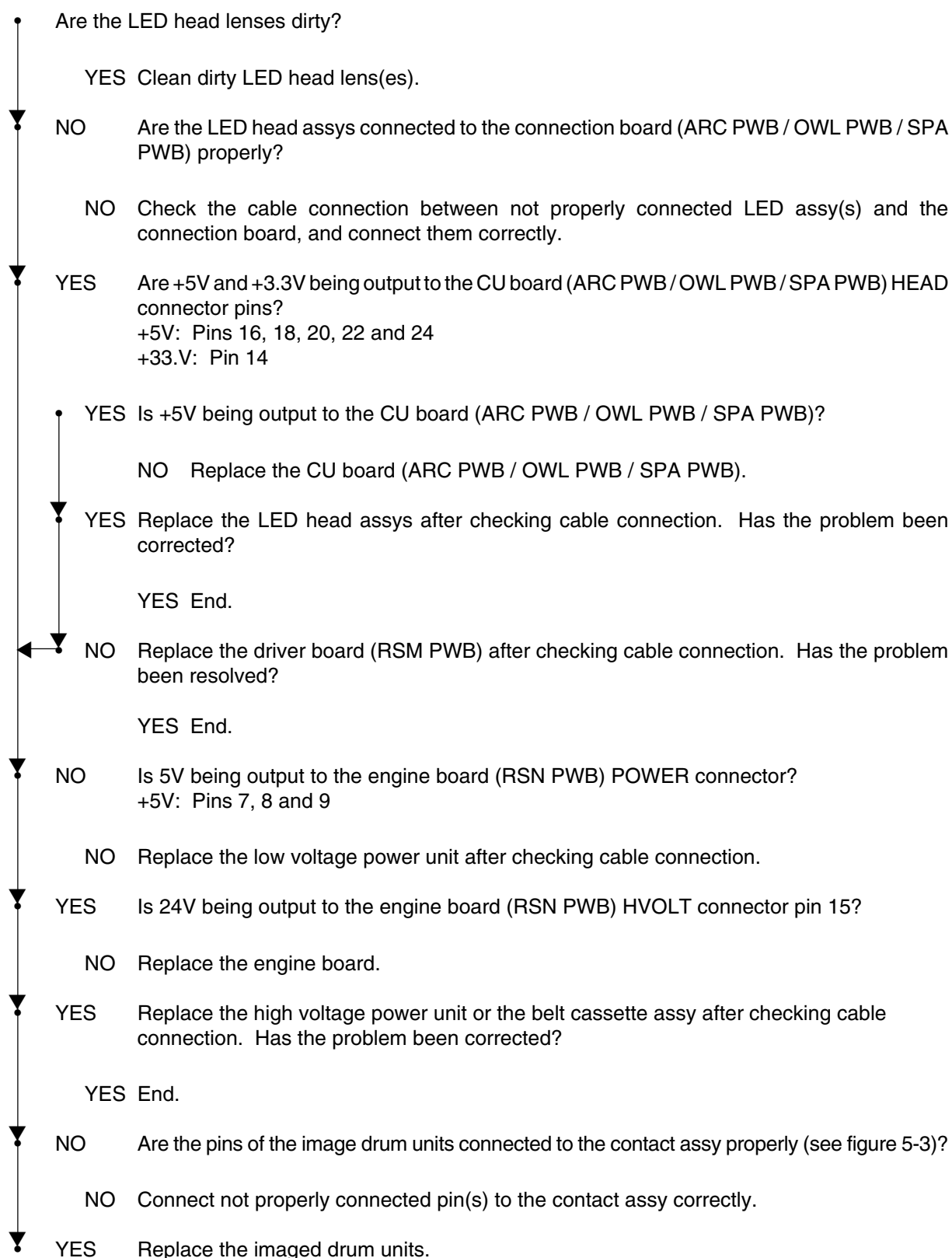
(B)

(B)

- [Is “YELLOW/MAGENTA/CYAN LEFT/RIGHT/HORIZONTAL” displayed?]
 - YES Replace the belt unit. Has the problem been corrected?
 - YES End.
 - ▼ NO Replace the image drum unit. Has the problem been resolved?
 - YES End.
 - ▼ NO Are there any problems in the gear assys of the image drums, multipurpose tray, belt unit, belt motor etc.?
 - YES Replace damaged gear assy(s).
 - ▼ NO Replace the driver board. Has the problem been corrected?
 - YES End.
 - ▼ NO Are the LED head units connected to the CU board (ARC PWB / OWL PWB / SPA PWB) properly?
 - NO Connect not properly connected LED head unit(s) to the connection board correctly.
 - ▼ YES Replace the LED head assys after checking cable connection. Has the problem been resolved?
 - YES End.
 - ▼ NO Replace the CU board (ARC PWB / OWL PWB / SPA PWB) after checking cable connection. Has the problem been corrected?
 - YES End.
 - ▼ NO Is the engine board (RSN PWB) connected to the CU board (ARC PWB / OWL PWB / SPA PWB) properly?
 - NO Connect the engine board to the connection board correctly.
 - ▼ NO Replace the engine board. Has the problem been resolved?
 - YES End.
 - ▼ NO Are the pins of the image drum units connected to the contact assy properly (see figure 5-3)?
 - NO Connect not properly connected pins to the contact assy correctly.
 - ▼ YES Replace the image drum units.

Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

⑩ Color different from original one



Note: When replacing the engine board (RSN PWB), extract EEPROM data from it and copy the data onto a new engine board.

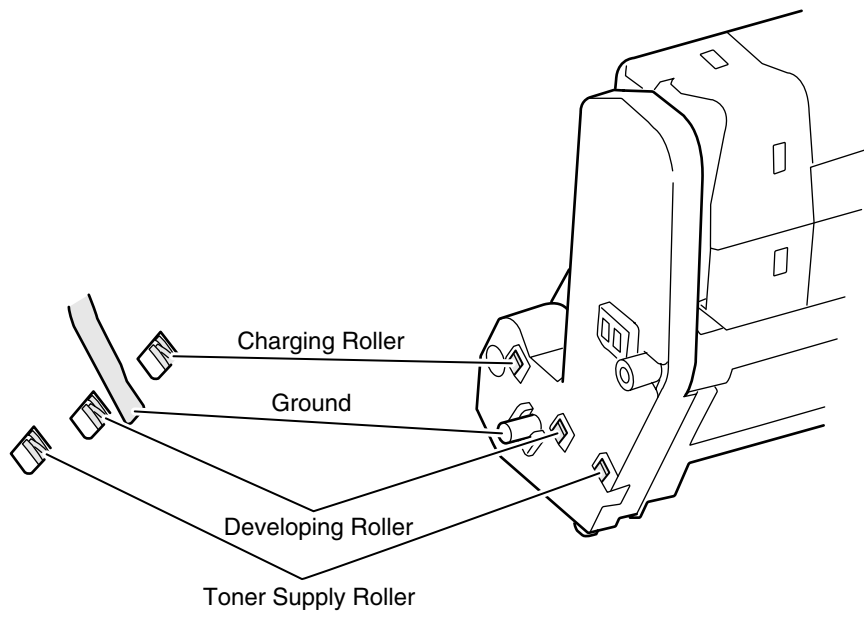


Figure 5.3

5.6 Fuse Checking

When the following errors occur, that fuse on the high voltage board which is associated with each error is to be checked (see table 5-6).

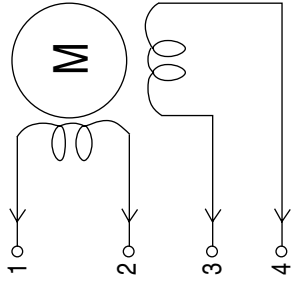
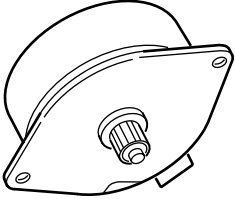
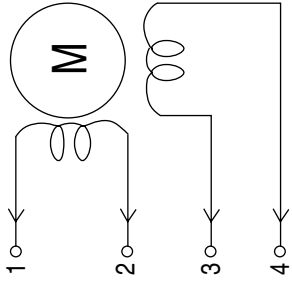
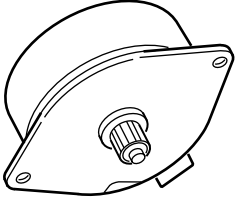
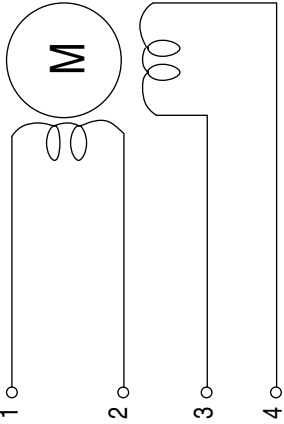
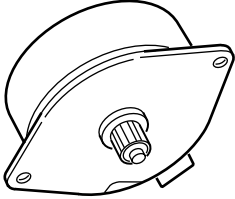
Table 5-6 Fuse Error

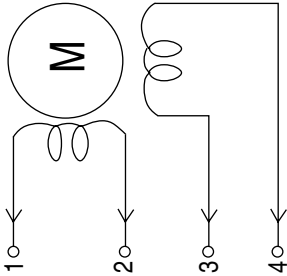
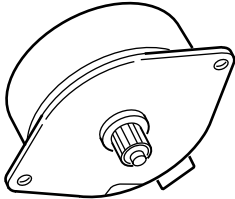
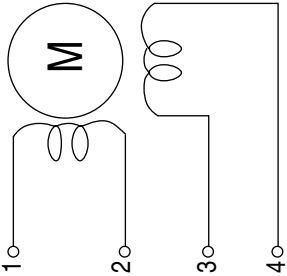
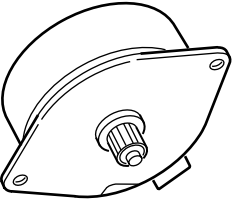
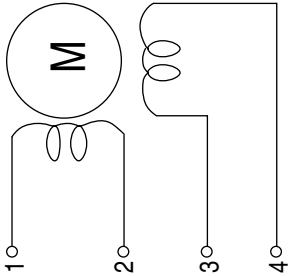
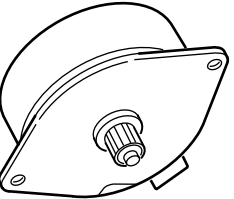
Fuse Name		Error Description	Insert Point
Engine Board (RSN PWB)	F1	M or C toner sensor error	M-ID and C-ID motor 24V
	F2	K toner sensor error	Hop and K-ID motor 24V
	F3	Cover open error	High voltage, fan, Ver and Y-ID 24V
	F4	2nd tray or duplex unit paper jam	2nd tray and duplex 24V
	F5	Paper jam during printing	Belt fuser motor 24V
	F6	No operator panel display	5V sensor system
High Voltage Board	IP102	Cover open error	High voltage 24V

6. CONNECTION DIAGRAM

6.1 Resistance Checks

Unit	Circuit Diagram	Illustration	Resistance
Transport Belt Motor			Between pins 1 and 2: 3.5Ω Between pins 3 and 4: 3.5Ω
Main Motor (Y)			Between pins 1 and 2: 6.0Ω Between pins 3 and 4: 6.0Ω
Main Motor (M)			Between pins 1 and 2: 6.0Ω Between pins 3 and 4: 6.0Ω

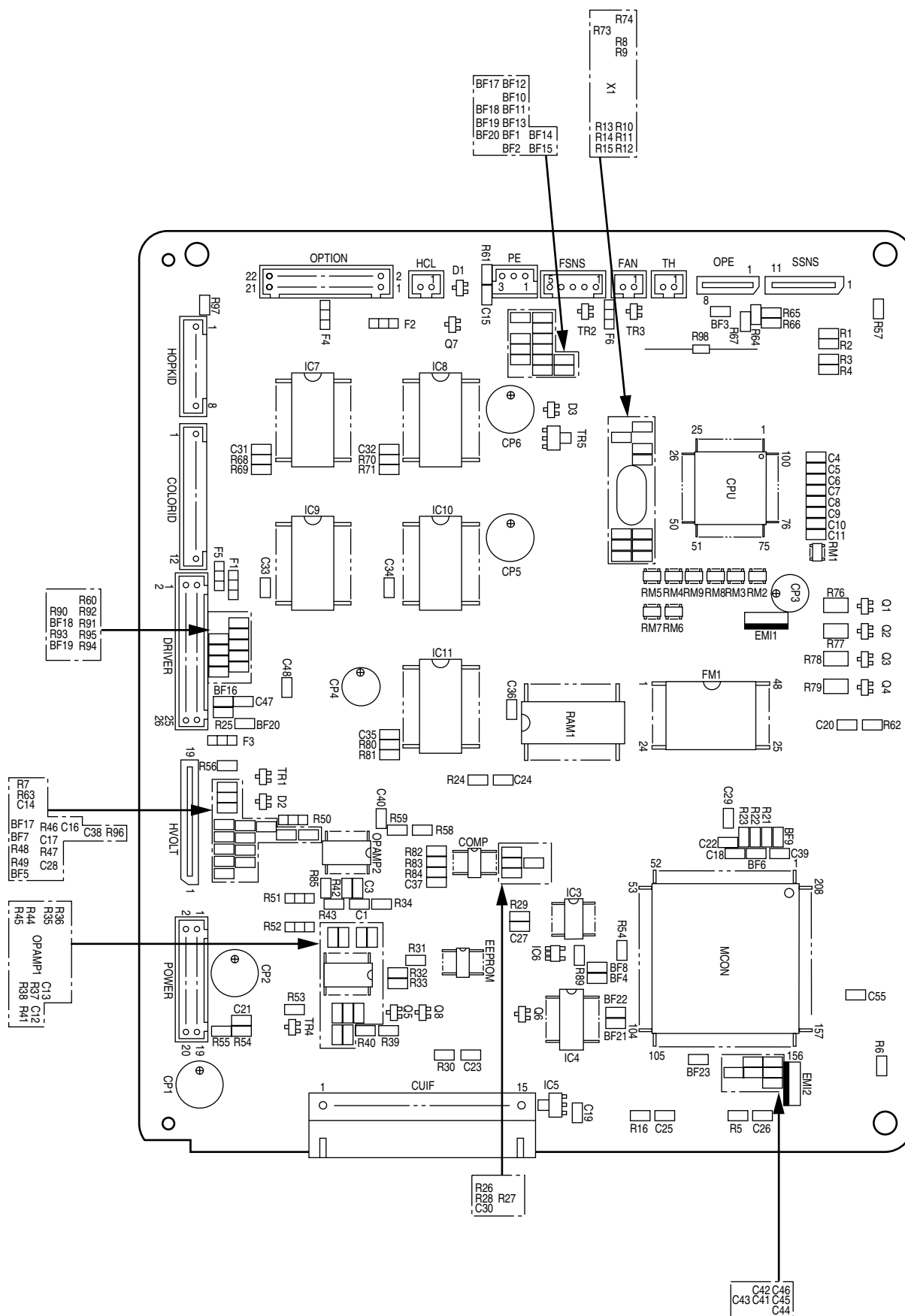
Unit	Circuit Diagram	Illustration	Resistance
Main Motor (C)			Between pins 1 and 2: 6.0Ω Between pins 3 and 4: 6.0Ω
Main Motor (K)			Between pins 1 and 2: 6.0Ω Between pins 3 and 4: 6.0Ω
Fuser Motor			Between pins 1 and 2: 6.0Ω Between pins 3 and 4: 6.0Ω

Unit	Circuit Diagram	Illustration	Resistance
Feeder Motor			Between pins 1 and 2: 3.5Ω Between pins 3 and 4: 3.5Ω
Duplex Motor			Between pins 1 and 2: 3.5Ω Between pins 3 and 4: 3.5Ω
2nd tray Feeder Motor			Between pins 1 and 2: 3.5Ω Between pins 3 and 4: 3.5Ω

Unit	Circuit Diagram	Illustration	Resistance
Fuser Unit	<p>The circuit diagram shows the following components and connections:</p> <ul style="list-style-type: none">Upper roller: Terminal a is connected to terminal b.Heater: A resistor symbol connected between terminal a and terminal b.Thermostat: A switch symbol connected between terminal b and terminal c.Thermistor: A resistor symbol connected between terminal c and terminal d.Terminals e and f are shown but not connected to any components.	<p>The illustration shows a perspective view of the Fuser Unit. The Upper roller is a large cylindrical component. The Heater is a small rectangular component. The Thermostat is a small circular component. The Thermistor is a small rectangular component. The terminals are labeled a, b, c, d, e, and f.</p>	<p>1. Upper Roller Side Between pins "a" and "b": Between pins "c" and "d": 363k Ω (at 25°C) Between pins "e" and "f": Open</p>

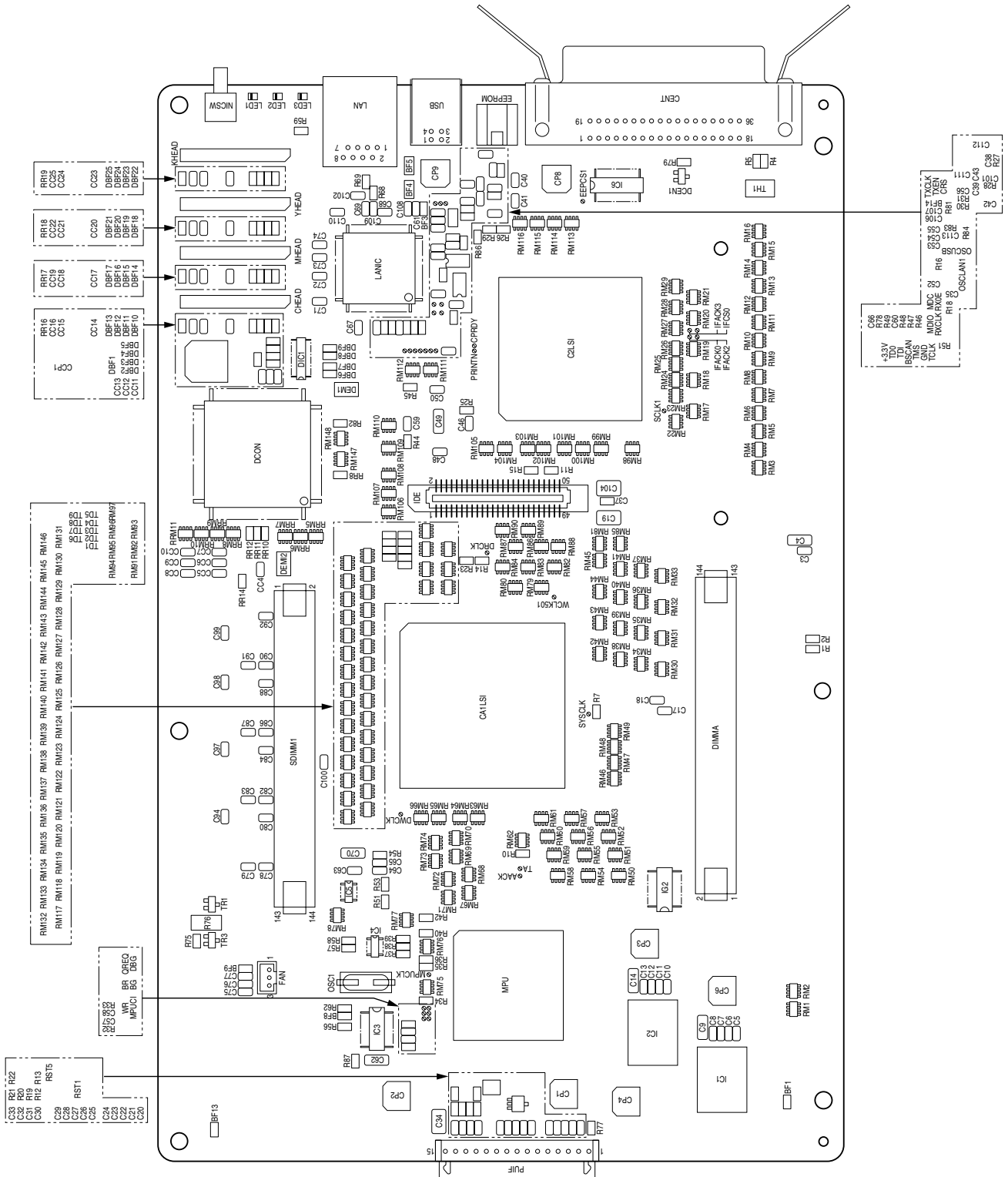
6.2 Program/Font ROM Layouts

(1) Print Engine Controller PWB (RSN-1 PWB)



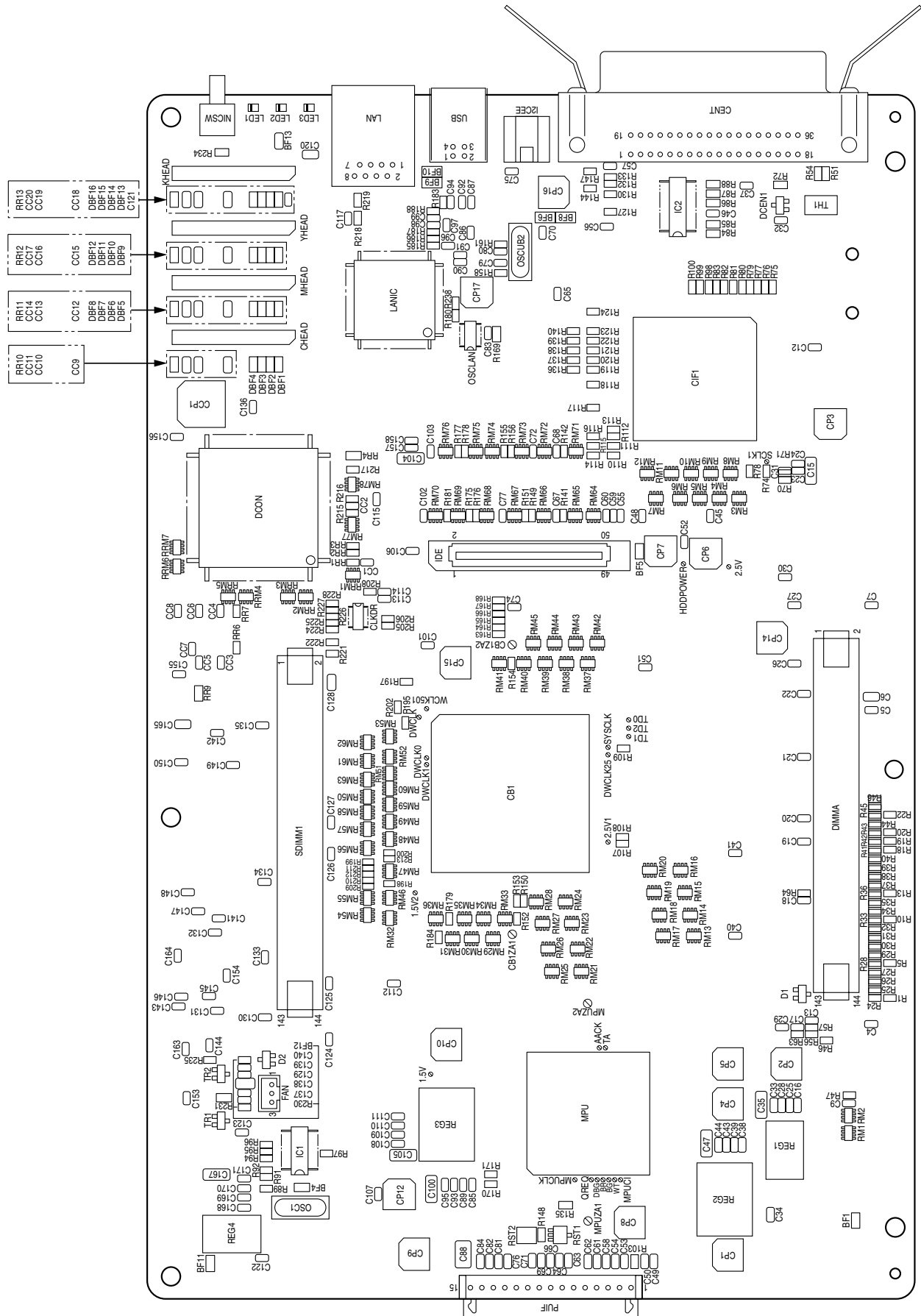
(2) Main Controller PWB (OWL PWB) (For C5300)

Serial No. ... "nnnAxxxxxx"

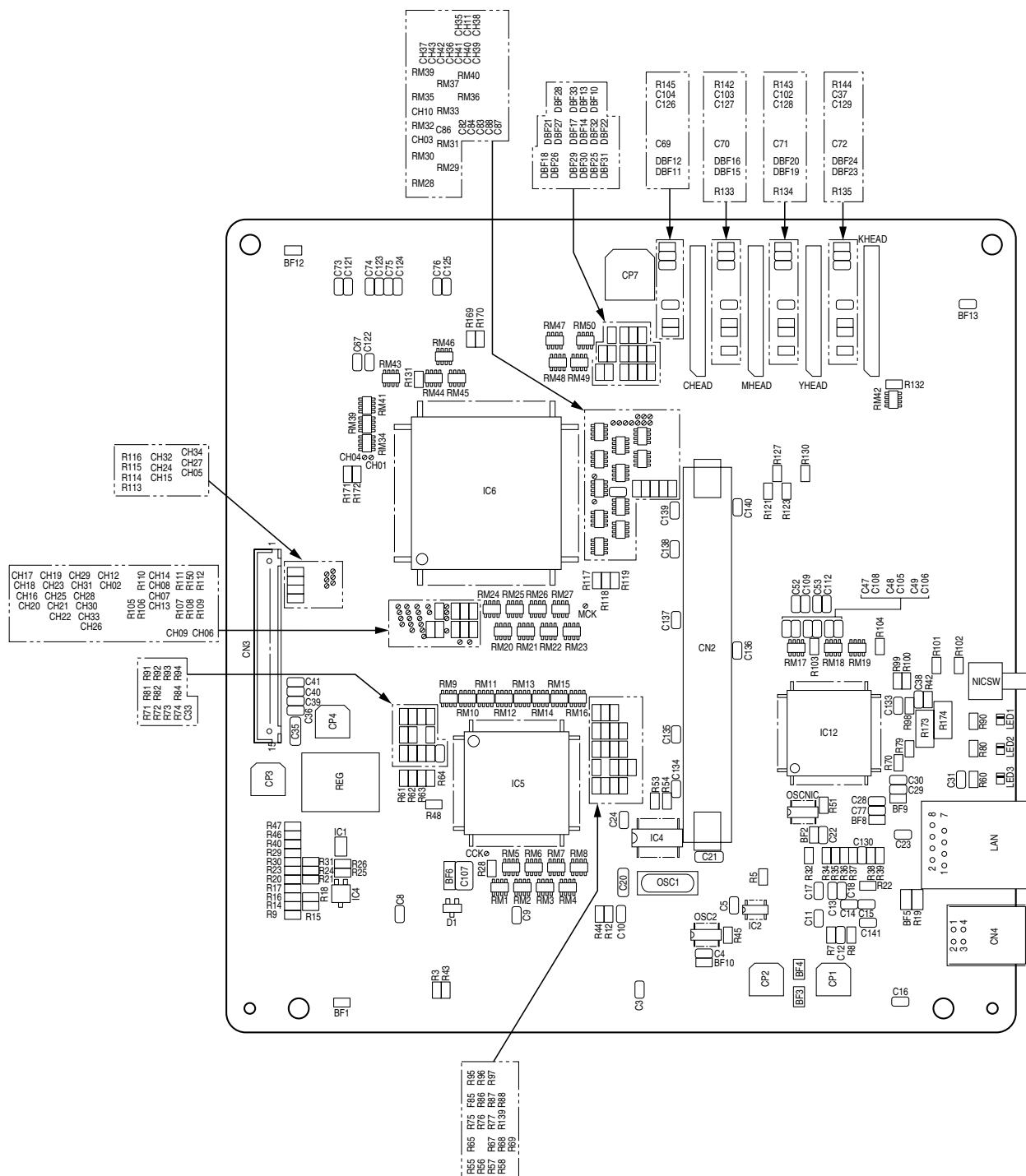


(3) Main Controller PWB (SPA PWB) (For C5300VE version)

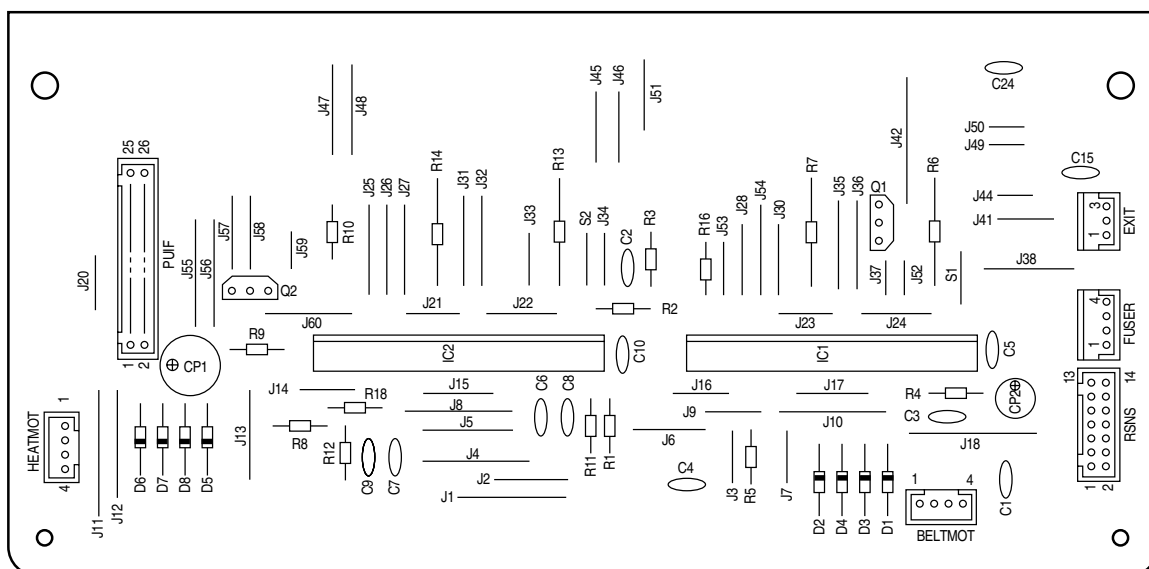
Serial No. ... "nnnBxxxxxx"



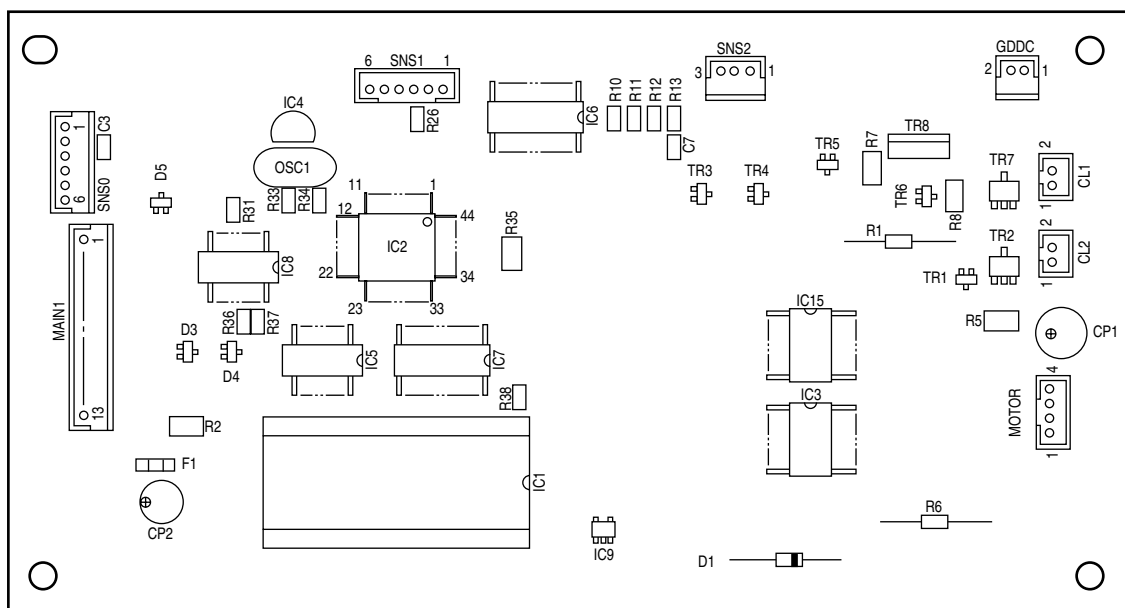
(4) Main Controller PWB (ARC PWB) (For C5100)



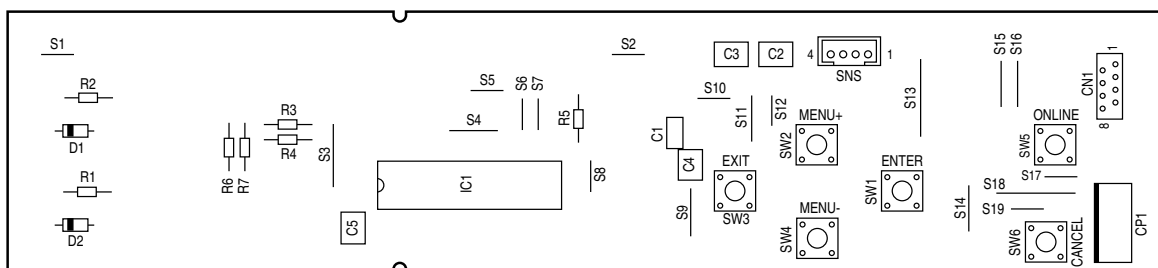
(5) Driver PWB (RSM PWB)



(6) Duplex Controller PWB (V7X PWB)



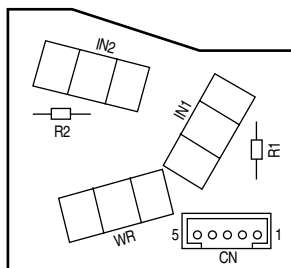
(7) Control Panel PWB (RSP PWB)



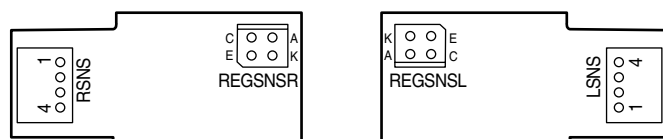
(8) Toner Low Sensor PWB (PRD-PWB)



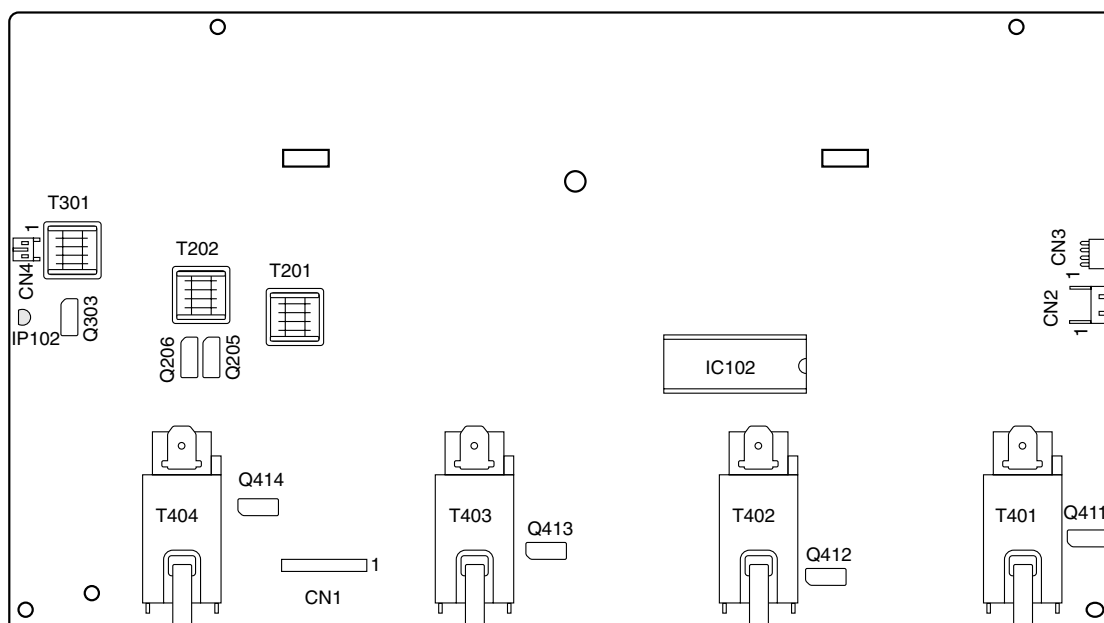
(9) Entrance Sensor PWB (RSF PWB)



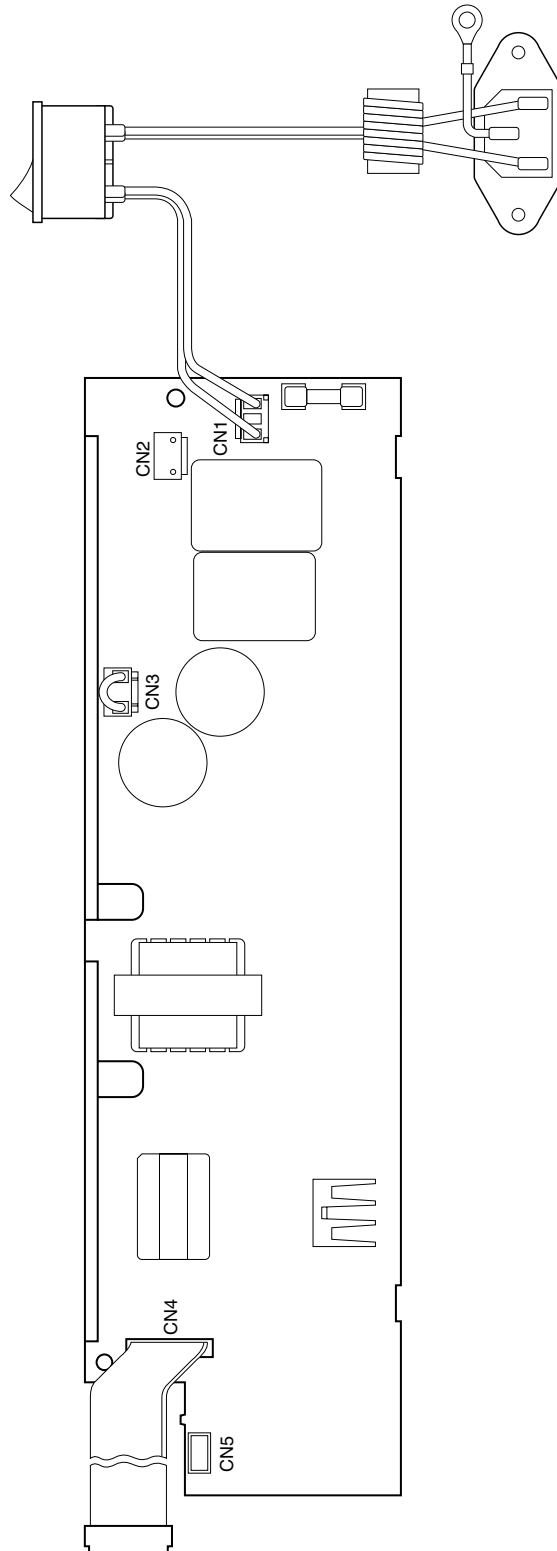
(10) Color Adjustment Sensor PWB (Z71 PWB)



(11) High voltage power supply PWB



(12) Low voltage power supply PWB



APPENDIX A INTERFACE SPECIFICATIONS

1. Parallel Interface Specifications (C5300)

1.1 Parallel Interface

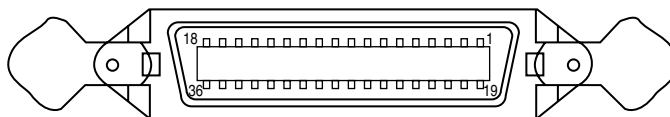
Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits: Compatibility mode, 4bits: Nibble mode, 9 bits: ECP mode

1.2 Parallel Interface Connector and Cable

1) Connector

Printer side: 36-pin receptacle
Type 57LE-40360-12 (D56) (made by Daiichi Denshi) or equivalent

Cable side: 36-pin plug
Type 57FE-30360-20N (D8) (made by Daiichi Denshi) or equivalent



Connector Pin Arrangement Viewed from Cable Side

2) Cable

Cable length: 1.8 m max.
(A shielded cable composed of twisted pair wires is recommended for noise prevention.)

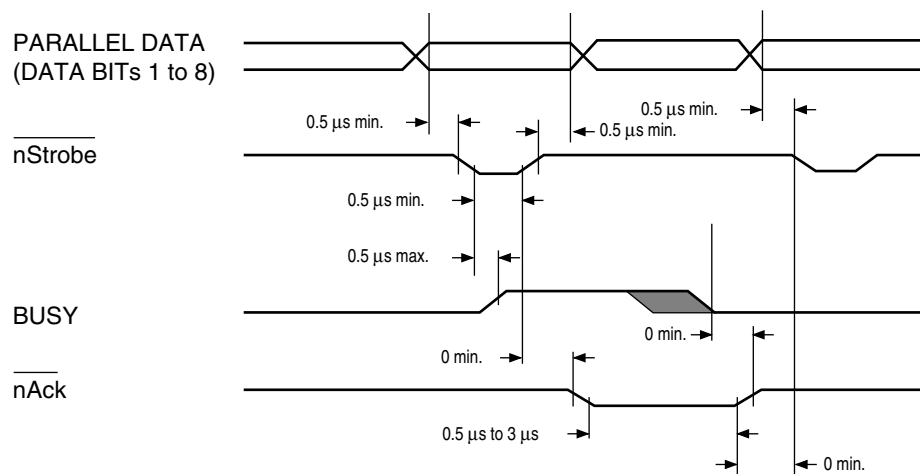
1.3 Parallel Interface Level

LOW: 0 V to +0.8 V
HIGH: +2.4 V to 5.0 V

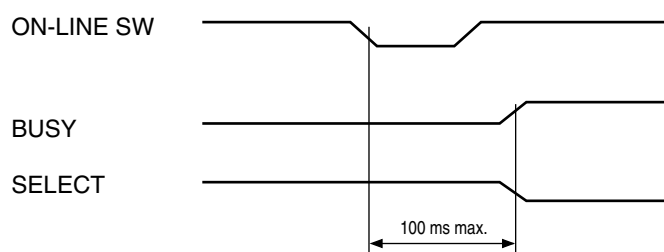
1.4 Timing Charts

Compatible mode

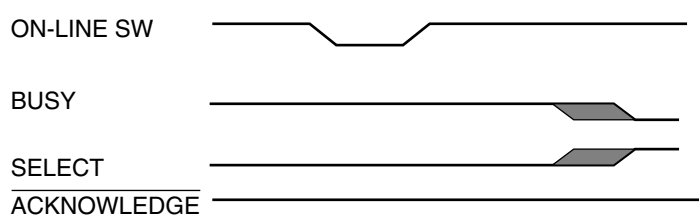
a) Data receiving timing



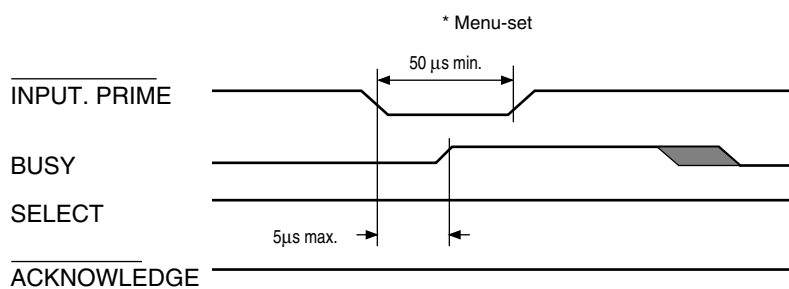
b) On-line (off-line switching timing by ON-LINE SW)



c) Off-line (on-line switching timing by ON-LINE SW)



d) nlnit timing (invalid by default)



1.5 Parallel I/F Signals

Table 8-1 shows interface signal names and pin numbers.

Table 8-1 Signals

Pin No.	Signal Name	Signal Direction	Functions
1	Nstrobe (HostClk)	→PR	Pulse for reading data in at trailing edge.
2	DATA 1	→PR	8-bit parallel data. Each signal is HIGH when data is logical 1 and LOW when it is logical 0.
3	DATA 2		
4	DATA 3		
5	DATA 4		
6	DATA 5		
7	DATA 6		
8	DATA 7		
9	DATA 8		
10	nAck (PtrClk)	←PR	Indicates the completion of data reception.
11	Busy (PtrBusy)	←PR	Indicates whether the printer is ready for receiving data. Data cannot be received while the signal is HIGH.
12	PError (AckDataReq)	←PR	Indicates paper error when held HIGH.
13	Select (Xflag)	←PR	HIGH without exception when the parallel interface is enabled.
14	NAutoFd (HostBusy)	→PR	Used in bidirectional communication.
15	-	-	Unassigned.
16	GND	-	Signal ground.
17	FG	-	Chassis ground.
18	+5V	←PR	Used for supplying +5V. Power cannot be supplied to the outside of the printer.
19	GND	-	Signal ground.
~			
30			
31	NInit (nInit)	→PR	Initializes the printer when held LOW.
32	NFault (nDataAvail)	←PR	LOW during alarm.
33	GND	-	Signal ground.
34	-	-	Unassigned.
35	HILEVEL	←PR	Pulled up to +5V at 3.3KΩ inside the printer.
36	Nselectin (IEEE 1284 active)	→PR	Used in bidirectional communication. Low without exception in compatible mode.

Note: Parenthesized signal names are used in nibble mode.

Only functions in compatible mode are listed.

This printer supports the IEEE std 1284-1994 nibble mode. Note that, when used with personal computers or cables that do not comply with the standards, the printers may exhibit unpredictable behavior.

2. Universal Serial Bus (USB) Interface Specifications

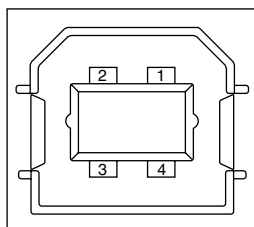
2.1 USB Interface

- (1) Basic specifications
Conforms to USB specification, revision 1.1.
- (2) Transmission mode
Full speed (max. 12 Mbps + 0.25%)
- (3) Power Control
Self-power device

2.2 USB Interface Connector and Cable

- (1) Connector
Printer side: Type B receptacle
Upstream port
USB-4R-D14T-1 (made by JST) or equivalent

Connector pin layout



Cable side: Type B plug

- (2) Cable
Cable length: 5 m max. (cable compliant with USB specification, revision 1.1)
(A shielded cable must be used.)

2.3 USB Interface Signals

	R1	Function
1	Vbus	Power Supply (+5V) (red)
2	D -	Data transmission (white)
3	D +	Data transmission (green)
4	GND	Signal ground (black)
Shell	Shield	

3 Network Interface Specifications

3.1 Network Interface

(1) Basic specifications

Network protocol

TCP/IP Specification

Network layer

ARP, RARP, IP, ICMP

Transport layer

TCP, UDP

Application layer

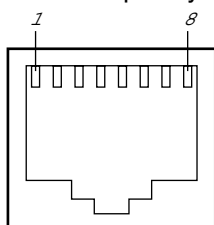
LPR, FTP, TELNET, HTTP, BOOTP, SMTP

3.2 Network Interface Connector and Cable

(1) Connector

100 BASE-TX / 10 BASE-T

Connector pin layout



(2) Cable

RJ-45 anti-Shield twist pair cable with connector (Category 5 recommended)

3.3 Network Interface Signals

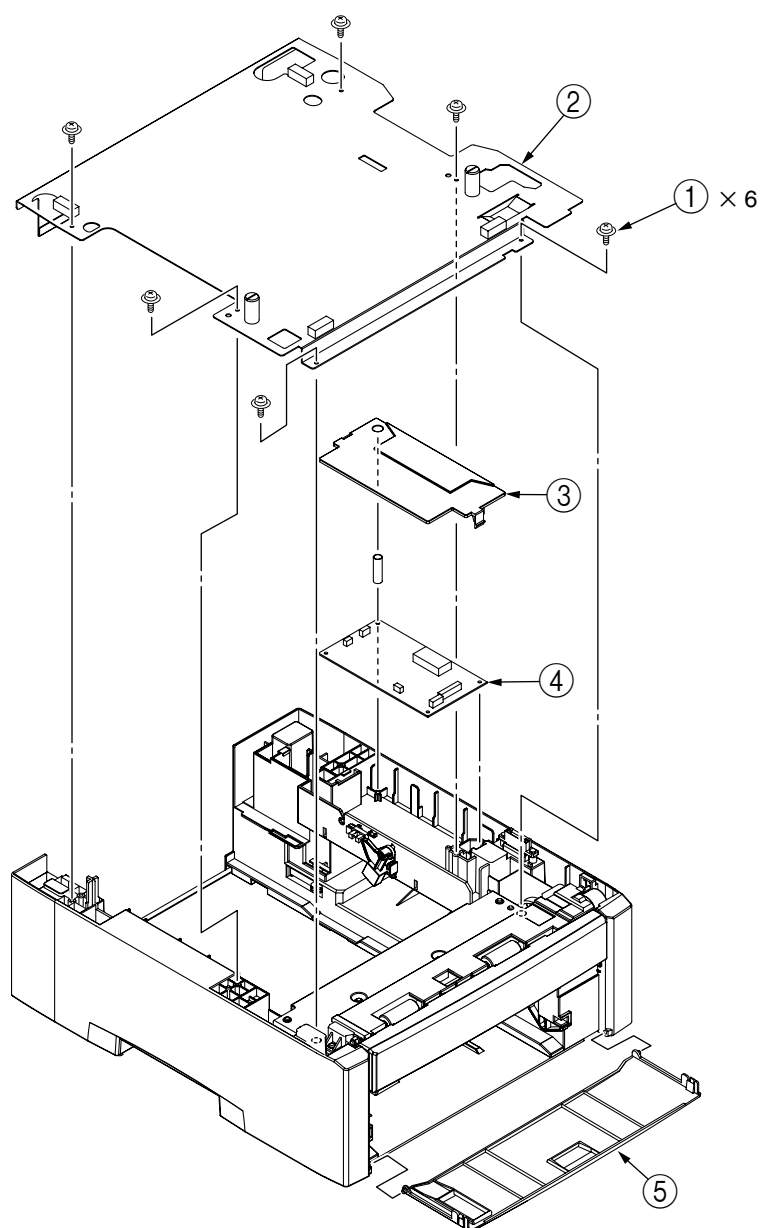
Pin No.	Signals	Signal Direction	Functions
1	TXD+	FROM PRINTER	Send Data +
2	TXD-	FROM PRINTER	Send Data -
3	RXD+	TO PRINTER	Received Data +
4	-	-	Unassigned
5	-	-	Unassigned
6	RXD-	TO PRINTER	Received Data -
7	-	-	Unassigned
8	-	-	Unassigned

APPENDIX B 2ND TRAY MAINTENANCE

1. Parts Replacement

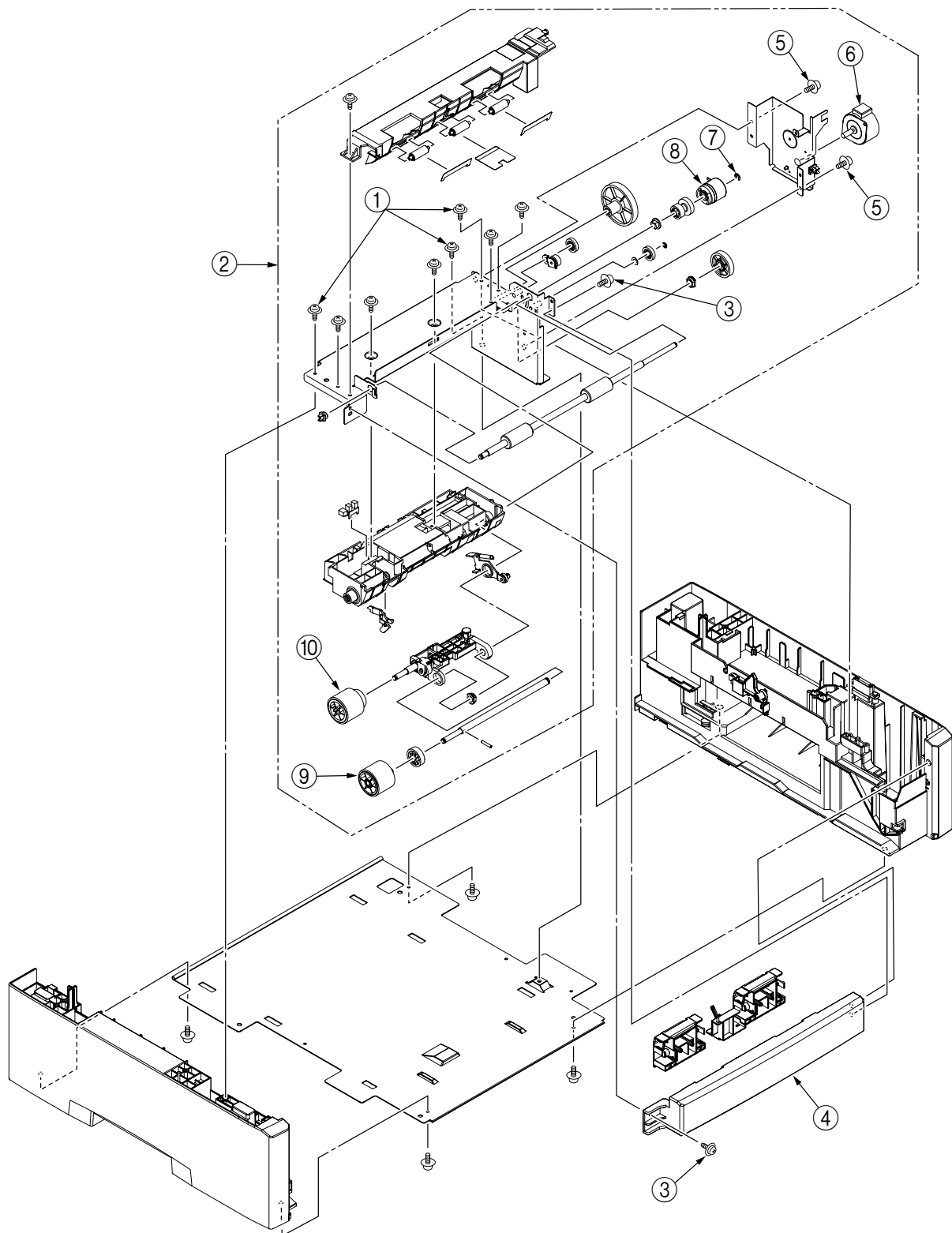
1.1 PCB

- (1) Unscrew the six screws ① to remove the plate-top ②.
- (2) Remove the cover-side R ③.
- (3) Remove the connectors (at five places), then uninstall the board ④.
- (4) Remove the cover - 2nd tray ⑤.



1.2 Frame Assy- Hopping

- (1) Remove the PCB (see section 1.1).
- (2) Remove the three screws ① to uninstall the hopping assy ②.
- (3) Unscrew the two screws ③ to remove the cover assy - front ④.
- (4) Unscrew the two screws ⑤ to remove the motor ⑥.
- (5) Remove the E ring ⑦ to remove the clutch ⑧.
- (6) Remove the roller assy - hopping ⑨.
- (7) Remove the roller assy - feed ⑩.

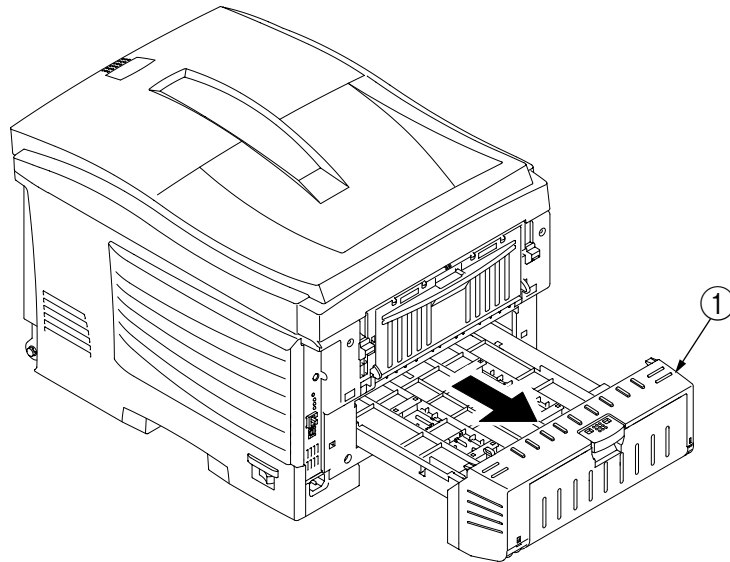


APPENDIX C DUPLEX UNIT MAINTENANCE

1. Parts Replacement

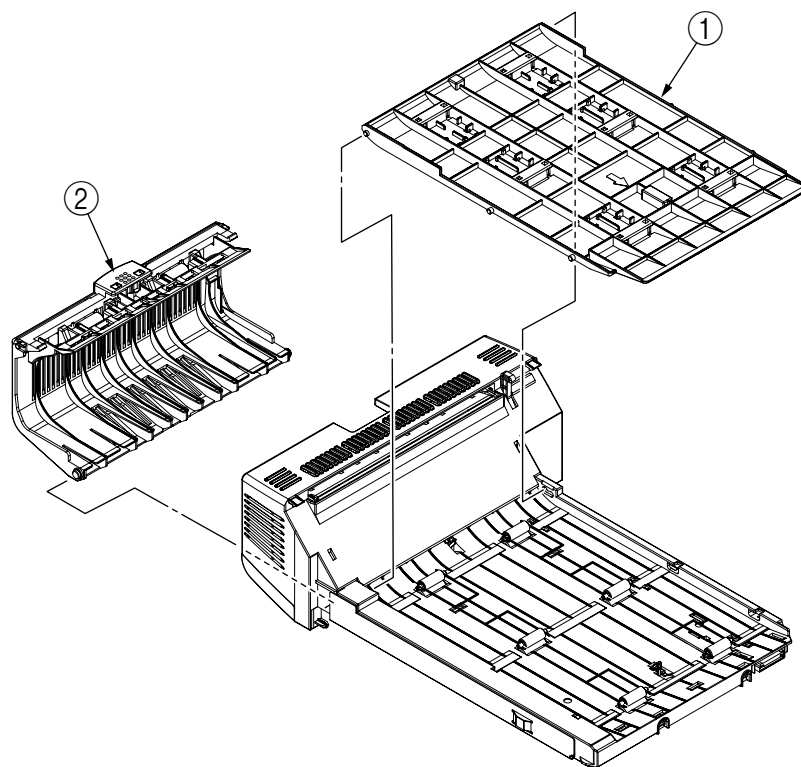
1.1 Duplex Unit

- (1) Slide out the duplex unit ①.



1.2 Upper Assy / Rear Assy

- (1) Remove the duplex unit (see section 2.2.20).
- (2) Warming the upper assy ①, detach it.
- (3) Warming the rear assy ②, detach it.



1.3 Duplex Transport Assy

- (1) Turn over the duplex transport assy.
- (2) Unscrew the three screws ① to remove the plate ②.
- (3) Make connector removal and claw disengagement to remove the PCB-V7X ③.
- (4) Disengage and remove the cover ④.
- (5) Unscrew the screw ⑤ to remove the motor assy ⑥.
- (6) Remove the gear ⑦ and the bushing ⑧ to remove the roller ⑨. Then the earth ⑩ and the bushing ⑪ become detached.
- (7) Unscrew the three screws ⑫ and the three pulleys-idle ⑬ to remove the pulleys ⑭. The mini-pitch belts ⑮ become detached together with the pulley.
- (8) Remove the holders ⑯ and the bushings ⑰ to remove the rollers ⑱. The earth spring becomes detached together with each roller.
- (9) Remove the fan ⑲.
- (10) Remove the spring ⑳ to remove the solenoid ㉑.
- (11) Release claw engagement to remove the solenoid ㉒.
- (12) Remove the lever ㉓. The lever ㉔ and the spring ㉕ become detached together with the lever ㉖.
- (13) Remove the actuators ㉗ and ㉘.
- (14) Remove cable connection and then, by claw warping, detach the five transport sensors ㉙.
- (15) Unscrew the screw ㉚ to remove the lock lever ㉛. Then the spring becomes detached.

